26696

National Library of Canada
Bibliothèque nationale du Canada

CANADIAN THESES ON MICROFICHE

THÈSES CANADIENNES SUR MICROFICHE

NAME OF AUTHOR/*NOM DE L'AUTEUR* JACQUELINE MARGARET ANDERSON

TITLE OF THESIS/*TITRE DE LA THÈSE* A ROAD MAP STUDY BASED ON THE 1974 OFFICIAL ALBERTA ROAD MAP

UNIVERSITY/*UNIVERSITÉ* UNIVERSITY OF ALBERTA

DEGREE FOR WHICH THESIS WAS PRESENTED/*GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE* MASTER OF SCIENCE

YEAR THIS DEGREE CONFERRED/*ANNÉE D'OBTENTION DE CE GRADE* 1975

NAME OF SUPERVISOR/*NOM DU DIRECTEUR DE THÈSE* J. J. KLAWE.

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

DATED/*DATÉ* 21 August 75 SIGNED/*SIGNÉ* J. M. Anderson

PERMANENT ADDRESS/*RÉSIDENCE FIXE*
Dept of Geography
Concordia University
7141 Sherbrooke Street West
Montreal
Quebec

NL-91 (3-74)

THE UNIVERSITY OF ALBERTA

A ROAD MAP STUDY
BASED ON THE 1974 OFFICIAL ALBERTA ROAD MAP

by

© JACQUELINE MARGARET ANDERSON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE

DEPARTMENT OF GEOGRAPHY

EDMONTON, ALBERTA
FALL, 1975

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled A ROAD MAP STUDY BASED ON THE 1974 OFFICIAL ALBERTA ROAD MAP submitted by JACQUELINE MARGARET ANDERSON in partial fulfillment of the requirements for the degree of Master of Science.

....
Supervisor
....
....
....

Date 8 August ...., 1975

ABSTRACT

Within cartography the realization of the need to understand the whole process of map communication is a relatively recent development. Many of the problems associated with map production have been studied but very little information is available on map usage. This study examines a small but significant aspect of map usage, the map user's information requirements. Road maps were selected as the subject of study because, although widely used by the general public, very little is known about their use.

Most of the study is concerned with the 1974 Official Alberta Road Map. The history and development of this map is examined since 1924. This provides background for the informational content and the design of the current map. Data on the current use of road maps were gathered by a questionnaire survey. Specific information on the use of the 1974 Official Alberta Road Map together with general information on each respondent's demographic background, motoring habits, and familiarity with maps was collected.

The most important result of the data analysis is that the 1974 road map seems to be used primarily for road information. Respondents tended to agree on what additional information was desired on this map. However, there were significant differences of opinion between Albertans and visitors to the province, concerning the importance of the current map information. On the basis of these findings recommendations for the improvement of the 1974 road map are discussed.

Together with these survey findings and a brief examination of the information content and design of 80 other comparable road maps, suggestions are made for the improvement of road maps in general. Several major conclusions are drawn: Among these are, that a decision must be made with regard to the priority of the information presented on a road map, and that much of the tourist oriented information currently found on road maps can be presented more successfully elsewhere.

ACKNOWLEDGEMENTS

I would like to express my great appreciation to the many people whose efforts made this thesis a reality. Unfortunately it is not possible here to acknowledge each person individually. I am indebted to Professor J.J. Klawe, my thesis supervisor, for his patient guidance and encouragement over the last two years. Special thanks also to Dr. D.B. Johnson for his aid and encouragement. Professor W. Jungkind's assistance as the external examiner is also gratefully acknowledged.

My appreciation is expressed to Travel Alberta for their financial assistance in the preparation, distribution, and analysis of the questionnaire. Particular thanks to Mrs. W. McIntyre for her constant encouragement and Miss J. MacLaren's invaluable assistance in the organization of the questionnaire distribution. Mr. W. Bogdan of the Department of Highways Mapping Branch made many helpful suggestions, and was particularly willing to answer my questions concerning the Official Alberta Road Map.

Without the support of the major oil companies and the individual gas station licencees, the successful distribution of the questionnaire to visitors of Alberta would have been difficult. I am therefore grateful to all these people.

The financial support from the Geography Department, and the help given by departmental staff in the production and printing of the questionnaire, computer programming, and reproduction of the plates and figures should also be recognized.

Last, but not least, I would like to thank all the respondents to my questionnaire. Without their co-operation in providing basic data, this thesis would not have been possible.

TABLE OF CONTENTS

Page

ABSTRACT IV

ACKNOWLEDGEMENTS VI

LIST OF TABLES XII

LIST OF FIGURES XIV

LIST OF PLATES XV

CHAPTER

I INTRODUCTION 1

MAP COMMUNICATION 1
ROAD MAPS 3
AIMS OF THE RESEARCH 4
RESEARCH TECHNIQUES 6
Literature Review 6
Study of Available Road Maps 7
Letters from Map Users 1945-1974 7
Questionnaire 8
ORGANIZATION OF THE THESIS 10

II MAP USER RESEARCH 11

PROBLEM OF MAP USER RESEARCH 11
METHODS FOR OBTAINING MAP USERS' OPINIONS 13
An Invitation for Comments 14
Meetings between Map Users and Map Producers 15
Surveys of Map Users 16
ROLE OF THE MAP USER IN INFLUENCING THE CARTOGRAPHIC PRODUCT 18
RESEARCH INTO THE USERS OF ROAD MAPS 19
SUMMARY 28
FOOTNOTES 29

III THE HISTORY AND DEVELOPMENT OF THE OFFICIAL ALBERTA ROAD MAP 30

HISTORY AND PRODUCTION OF THE ROAD MAP 32
FORMAT, MAP SCALE, AND METHOD OF FOLDING 38

CHAPTER Page

Period of Production 1924-1960 38
Period of Production 1961-1966 54
Period of Production 1967 to Present 56
MAP INFORMATION CONTENT OF THE ROAD MAP 58
Physiography 58
Settlement Information 60
Transport Information 61
Tourist Information 65
Miscellaneous Information 66
Reference Location System 66
PRESENTATION OF THE MAP INFORMATION CONTENT 67
Colour 67
Physiography 70
Settlement Information 71
Administrative Names 73
Transport Information 73
Tourist Information 76
Legend 78
Reference Location System 79
MAP USER COMPLAINTS 80
SUMMARY 81
FOOTNOTES 84

IV THE QUESTIONNAIRE DESIGN: DISTRIBUTION, AND METHOD OF ANALYSIS 85

RESEARCH METHOD 85
THE QUESTIONNAIRE 86
Production 86
Pilot Surveys 87
Design 90
Content 90
QUESTIONAIRE DISTRIBUTION 93
Albertans (Sample Population A) 93
Albertans (Sample Population A1) 94
Visitors (Sample Population B) 95
QUESTIONNAIRE RESPONSE 99
QUESTIONNAIRE ANALYSIS 103
SUMMARY 105

V ANALYSIS OF DATA FROM THE 1974 OFFICIAL ALBERTA MAP USER SURVEY 106

CHARACTERISTICS OF RESPONDENTS 107
Demographic Characteristics 107
General Motoring Habits 116
Familiarity with Maps 120
USE OF THE OFFICIAL ALBERTA ROAD MAP 128

CHAPTER Page

Map Preference 128
Non Use of 1974 Map 130
Use of 1974 Map 131
Prediction of Map Use 133
General Information on Use of 1974 Map 134
Use of Alberta Travel Guide 134
ASSESSMENT OF THE 1974 ROAD MAP 136
General Assessment of the Map 136
Assessment of Information Content 136
Mileage Information 143
Legend 143
RESPONDENTS COMMENTS ON THE 1974 ROAD MAP 145
Road Map 145
Vacation Planner 147
City Insets 147
SUMMARY 148

VI A COMPARATIVE STUDY OF SOME ROAD MAPS AVAILABLE IN NORTH AMERICA 150

FORMAT, MAP SCALE AND FOLDING 151
Format 151
Map Scale 151
Folding 153
INFORMATION CONTENT AND PRESENTATION 154
Physiography 154
Transportation 156
Tourist Information 164
Administrative Boundaries 166
Other Information 167
Colour 171
SUMMARY 172

VII CONCLUSIONS 174

1974 OFFICIAL ALBERTA ROAD MAP 174
RECOMMENDATIONS FOR ROAD MAPS IN GENERAL 185
MAP-USER RESEARCH 187
FOOTNOTES 189

BIBLIOGRAPHY 190

APPENDICES Page

A MINUTES FROM I.C.A. COMMISSION V 1972 196

B 1974 OFFICIAL ALBERTA ROAD MAP. For location see back pocket. 198

C ROAD CATEGORIES PRESENTED ON THE OFFICIAL ALBERTA ROAD MAP, 1924-1974 199

D 1973 OFFICIAL ALBERTA ROAD MAP. For location see back pocket. 202

E Questions in the 1974 OFFICIAL ALBERTA MAP USER SURVEY 203

F QUESTIONNAIRE DISTRIBUTED TO ALBERTANS (POPULATION A). For location see back pocket. 208

G QUESTIONNAIRE DISTRIBUTED TO VISITORS TO ALBERTA (POPULATION B). For location see back pocket. 209

H FOLLOW UP QUESTIONNAIRE DISTRIBUTED TO ALBERTANS (POPULATION A). For location see back pocket. 210

I QUESTIONNAIRE DISTRIBUTED TO ALBERTANS (POPULATION A1). For location see back pocket. 211

J LOCATION OF QUESTIONS IN APPENDIX E ON THE ACTUAL QUESTIONNAIRES (APPENDICES F,G,H,I) 212

K LETTER OF INTRODUCTION SENT TO ALBERTANS (POPULATION A) 214

L LETTER OF INTRODUCTION SENT WITH THE FOLLOW UP QUESTIONNAIRE TO ALBERTANS (POPULATION A) 216

M LETTER OF INTRODUCTION SENT TO ALBERTANS (POPULATION A1) 218

N POST CARD REMINDER SENT TO ALBERTANS (POPULATION A1) 220

O MAPS SELECTED FOR THE GENERAL ANALYSIS OF ROAD MAPS 222

LIST OF TABLES

Table	Description	Page
3-1	Years when Official Alberta Road Maps were Issued, and Producing Authority	35
3-2	Map Scale and Format of Official Alberta Road Map, 1924-1974	40
3-3	Page 1 from Bocklet Accompaning 1924 Official Alberta Road Map	43
3-4	Information Content of Official Alberta Road Map, 1924-1974	59
3-5	Colour of Information Content on Official Alberta Road Map, 1924-1974	68
3-6	Some Type Characteristics of Official Alberta Road Map, 1924-1974	69
3-7	Users' Complaints from Letters Received, 1945-1974	82
4-1	Types of Questions	91
4-2	Classification of Questions According to Information Content	92
4-3	Number of Questionnaires Returned	100
4-4	Reasons for Discrepancies between Number of Questionnaires Returned and Number Analysed	101
4-5	Questionnaire Data Measurement	104
5-1	Duration of Visitors Stayed in Alberta	105
5-2	Percentage of Respondents who Used Selected Travel Aids in a 12 Month Period.	124
5-3	Respondents Satisfaction (Percent) with Information Content of Selected Travel Aids	126
5-4	Percentage of Respondents who Used: An Official Alberta Road Map; 1973 and 1974 Map	129

Table	Description	Page
5-5	Respondents' Preferences between 1973 and 1974 Official Alberta Road Maps	129
5-6	Importance of Purposes for which 1974 Official Alberta Road Map was used	132
5-7	Importance of Selected Information Symbolized on 1974 Official Alberta Road Map	138
5-8	Ranking of Selected Information Symbolized on 1974 Official Alberta Road Map	140
5-9	Importance of Including Additional Specified Information on Official Alberta Road Map	142
5-10	Importance of Mileage Information on 1974 Official Alberta Road Map	144
6-1	Number of Road Categories Symbolized on Selected Road Maps	158
6-2	Colours used to show 3 most Important Road Categories on Selected Maps	160
6-3	Number of Settlement Classes, According to Size of Population, Distinguished on Selected Maps	168
6-4	Number of Additional Items of Information Included on Selected Maps	170

LIST OF FIGURES

Figure	Description	Page
3-1	Number of Official Alberta Road Maps Produced, 1956-1974	36
3-2	Folding Method used for Official Alberta Road Map, 1924-1974	39
4-1	Distribution Centres for Visitor Questionnaire	97
4-2	Questionnaire Response Rate	102
5-1	Sex of Respondent	108
5-2	Age of Respondent	109
5-3	Education of Respondent	112
5-4	Origin of Visitors to Alberta	114
5-5	Number of Motor Vehicles Owned by Respondent	117
5-6	Reason for Mileage Travelled Outside Cities During a 12 Month Period.	119
5-7	Map Reading Education of Respondent	121
5-8	Daily Use of 1974 Official Alberta Road Map	135

LIST OF PLATES

Plate	Description	Page
3-1	Taken from the 1924 map	33
3-2	Taken from the 1932 map	46
3-3	Taken from the 1940 map	49
3-4	Taken from the 1946 map	51
3-5	Taken from the 1960 map	53
3-6	Taken from the 1961 map	55

CHAPTER I

INTRODUCTION

> "Cartography, derived from the needs of Man's life, is meant to be to his advantage. Therefore both the making and utilization of maps, which have been closely interconnected from the very beginning of their joint history, should be of equal interest to the cartographer."(Kolacny, 1969, p.47)

Cartography has been defined as "the art, science and technology of making maps together with their study as scientific documents and works of art" (International Cartographic Association Dictionary, 1973, p.1). The success of maps as a means of visual communication, enabling easy interpretation, comparison and analysis of spatial data, is illustrated by the use of maps in a wide variety of disciplines. The very nature of geographic data has made maps a particularly indispensible tool for the geographer.

MAP COMMUNICATION

The contents of a map may be simple or complex. A simple map presents the spatial distribution of a single phenomenon, whereas a complex map shows the relationships between a number of spatial phenomena. Maps also differ in scale, format, availability, price, and so on. However, all maps have two major phases: production and use. Since these two processes do not occur simultaneously, it is not surprising that they have as a rule been investigated separately. An investigation of the available cartographic literature reveals that very little research has been conducted into the usage of maps. Instead, most cartographic research has been directed towards the problems relevant to their creation and production.

Only since 1968 has there been a recognition of the need to understand the whole of the cartographic communication process. During the fourth technical conference of the International Cartographic Association (I.C.A.) in New Delhi, it was recommended that a working group should be organized to consider "the communication of cartographic information" (Kolacny, 1971, p.65):

> "If the cartographer wants to create a map which will have a maximum effect he should not only make an effort to objectively interpret and represent the projected reality, but he must at the same time and with the same concern consider the conditions of the map users, their needs, interests, abilities, skills, personal characteristics, etc." (Kolacny, 1971, p.65).

This quotation demonstrates that just as the map creation and production is a complex procedure, so there are also many facets to map usage. A statement of the need for research on map users is included in the aims of the I.C.A. Commission V "Cartographic Communication", established in 1972 (Appendix A).

ROAD MAPS

A road map is a special purpose map. It has been defined by the writer as "a thematic map showing the conditions of transport by road, with an emphasis on related additional features such as road identification and mileage distances". Other elements useful to orientation are also generally included; e.g., hydrography, settlements, railways, and so on.

The known existence of road maps can be traced from the famous Roman road map, Tabula Peutingeriana (500 A.D.). However, it was not until the early twentieth century, with the arrival of the motor car, that road maps began to appear with some abundance. Today in the developed countries the ownership of a motor vehicle is the rule rather than the exception. This factor, coupled with increased leisure time, has created an increased demand for road maps.

Dependence on the car for transport, by the general public, is peculiarly characteristic of the North American way of life. This is reflected in the fact that each Canadian province, and many states of the United States of America (U.S.A.), produce official road maps which are issued to the public free of charge. In addition, numerous other road maps are published for oil companies, and motoring organizations by private mapping companies. Road atlases are also readily available to the general public.

AIMS OF THE RESEARCH

Each year the Official Alberta Road Map is produced by the Department of Highways Mapping Branch in conjunction with Travel Alberta. This map is available free of charge to the public. Over 750,000 maps were printed in 1974, but nothing is known about the characteristics of the map users and their information requirements. Part of this study was therefore undertaken to provide such information about the users of the 1974 map (Appendix B). The major objectives of the study were to:

1. Find out the general characteristics (demographic, motoring habits, familarily with maps) of road maps users, particularly those who have used the 1974 Official Alberta Road Map.
2. Determine and evaluate the major purpose(s) for which

the 1974 map was used.

3. Analyze the users' assessments concerning the design and information content of the 1974 map.
4. Propose improvements to the Official Alberta Road Map based on the information obtained from the study.
5. Make suggestions for the general improvement of road maps based on the findings of the 1974 Official Alberta Road Map Survey and the general analysis of 80 other official provincial and state road maps.

The writer realises that this study deals with only a very small element of map usage, the information requirement of the user. It does not consider the ability of the map user to use the map information. However this study is considered by the writer as a useful starting point. There is a major difference between a map which fails to communicate the information contained, and a map which fails to communicate because the right kind of information is not there. Logically, the definition of the user and his information requirements should come first, and the designing of the map to satisfy these parameters should come second.

The research approach taken was mainly exploratory, cartographic, and empirical. No other approach was possible because little other relevant map user research is available. Nevertheless, this approach seems to have significant practical value. One should be able to apply the findings obtained from the Alberta survey to areas which, though geographically different, have a similar socio-economic situation. The principles should remain the same, although the features presented on the road map may be different. For example, roads would always be shown, but the number of road classes might vary from area to area.

RESEARCH TECHNIQUES

Literature Review

The major material reviewed is the literature available on map-user research. Emphasis has been placed on several areas of this literature. The first area concerns the different attitudes of researchers to map-user studies. Available research techniques are the second area of study. This is followed by detailed account of the literature available on road-map user surveys.

Reference is also made to literature on map design, where it is relevant to the comments on design which emerge from the results of the study.

Study of Available Road Maps

Two studies of road maps were made. The first was concerned with the history and development of the Official Alberta Road Map. Very little documented information is available on this map. Thus the knowledge about method of production, information content and methods of information presentation was obtained through careful study of copies of the road map for every year the map was produced, and interviews with people involved in the map's production.

The second study involved a comparison of other official Canadian road maps, oil company maps of Alberta, and other official state road maps. The features studied include format, map scale, method of folding, information content, and information presentation.

Letters from Map Users 1945-1974

Since 1945 letters from users of the Official Alberta Road Map have been filed by the Department of Highways. Such letters might seem a good source of opinion; however, a brief examination of these letters reveals some problems encountered when using them to assess the map user's opinions (See Chapter III).

Questionnaire

A questionnaire was the major technique used for the purposes of this thesis. This questionnaire was justified as a tool of investigation because there seemed to be no other way of objectively obtaining the required information. No statistics existed; that is, there was neither qualitative nor quantitative information on user's opinions or map criticisms available on the scale proposed.

The questionnaire on the 1974 Official Alberta Road Map covered the following:

1. The characteristics of the map user (age, sex, education, motoring habits, and familarity with maps in general).
2. The purpose(s) for which the map was used.
3. The adequacy of the map's overall design and information content.

Initially it was proposed that the questionnaire would be composed of two parts. The first part was to be a short postcard questionnaire. This was to contain questions on age, address (visitor or Albertan), possession and use of Official Alberta Road Maps; and expected use of the 1974 road map (if possessed). It was then proposed to follow this questionnaire with a longer, more detailed one concerning the actual use of the 1974 map.

Problems relating to the identification of the population and the distribution of the questionnaire forced a modification of this approach. Eventually it was decided to distribute the questionnaire to three different sample populations. These were:

1. Population A. Albertans who were known to have obtained copies of the 1974 Official Alberta Road Map. This population provided information on the use of the map by Albertans.

2. Population A1. A random sample of Albertans in general. The responses from this population provided the ability to make a statement concerning the representativeness of Population A.

3. Population B. People who were known to be visitors to the province of Alberta. As the road map is primarily produced to attract visitors to the province it was necessary to sample this population.

Since the questionnaire forms are an important part of the study it is treated in some detail in the relevant chapter (Chapter IV).

ORGANIZATION OF THE THESIS

The thesis is organized into seven chapters. Chapter I identifies the purpose of the investigation and provides necessary background information. Chapter II reviews the literature on methods available for map user research and the studies that has been conducted into road map usage. Chapter III follows with a description of the history and development of the Official Alberta Road Map since its first issue in 1924. Chapter IV considers the compilation, preliminary pilot testing, distribution, and response rates of the questionnaire used to obtain the opinions of the 1974 road map users. Chapter V contains the analysis of the questionnaire responses. Chapter VI investigates briefly the format, scale, folding technique, map content, and information presentation of some of the other road maps available to the general public within North America. Finally, in Chapter VII, conclusions from all these studies are drawn, and recommendations for improvement of the Official Alberta Road Map and road maps in general are made.

CHAPTER II

MAP USER RESEARCH

> "...there is a known market for all kinds of cartographic material. But although approximate figures are available there is surprisingly little information on the number and types of different map categories people possess, what maps are used for and what opinions people have about them." (Kirby, 1970, p. 31)

PROBLEM OF MAP USER RESEARCH

Information on map user research forms a minute part of the available cartographic literature. Perhaps one reason for the lack of literature is that the ability to utilize maps has been regarded as nothing more than common sense. Another reason could be the complacent nature of cartographers' prejudices and opinions concerning what the user requires from a map and what information the user is capable of retrieving:

> "There prevails the tacit assumption that the user will simply learn to work with any map which a cartographer makes." (Kolacny, 1969, p. 47).

It is also probable that map-user studies have not been conducted because the map producer believes that users do not actually know what they want. The following statement, in which the Director General of the Ordnance Survey [United Kingdom (U.K.)] summarizes his findings on "the public", illustrates this point:

> "It (the public) is completely satisfied but complains bitterly. It knows exactly what it wants but is not sure of its requirements. It regards us as a most efficient organization but feels that we are completely incompetent. It feels that our products are vital but wonders why we bother to make them. It thinks that our maps are excellent value for the money but they ought not to be so expensive. It knows nothing about the science of map reading but is always ready to advise a department which obviously does not know it's own mind and of course it always lives at the junction of four sheets!" (Willis, 1959, p. 150).

From such a paradoxical summary it might easily be argued that the views of the map user should be regarded as an insignificant part of map communication. However, mapping organizations must know whether or not the maps they produce are answering their clients' more important needs (McGrath and Kirby, 1969).

Most large producers of maps fall into one of two groups. They are either commercial map producers, or government mapping agencies. It has been stated that commercial map producers can judge from their sales whether the maps they produce answer the user's needs (McGrath and

Kirby, 1969). This hypothesis should be questioned. Fullard (1965) considered the question of atlas sales as an indication of the success of the product. He concluded these were not a valid index, because sales seem to be greatly influenced by factors not related to the actual design and content of the atlas; for example, the efficiency of the sales organization, or the quality of the binding. A further argument against the importance of sales statistics is that the value of a map can only be assessed by its purchaser after he/she has had the opportunity to use it.

Even if map sales were a reliable reflection of the success of the commercial product, they still could not be used as an index of satisfaction for many of the map products available, since many government maps have a monopoly of the market. There are also maps which are issued free, such as numerous road maps. Therefore, users' opinions of these map products at least must be obtained by other methods. Several avenues do exist; however, the success and efficiency of these methods vary.

METHODS AVAILABLE FOR OBTAINING MAP USERS' OPINIONS

The methods available have been well documented by McGrath and Kirby 1969 in their article Survey Methods on the Use of Maps and Atlases. They describe the methods under three general headings, as indicated below.

1. An invitation to the user to inform the map publisher of comments, criticism or suggestions concerning the publication". (McGrath and Kirby, 1969, p. 133)

Within this approach two different methods can be identified. The first is illustrated by the practise of the Canadian Hydrographic Service. They attempted to find out the views of users of particular hydrographic charts of the Trent-Severn Waterway. A card requesting comments was enclosed with each map sold. However, in the example quoted (Chart 2028), only 2.3% returns were received (Walsh, 1970).

Some maps contain, in the marginal information, a "note" requesting the map user to inform the map producer of errors or omissions. These "notes" are particularly associated with topographic maps.

Although evidence is available that certain map users do inform map publishers of errors (Klawe, 1970), such an approach reveals only a limited aspect of the map user's opinions. By the very nature of the request, the user is concerned with a specific complaint, e.g., the incorrect classification of a road. There is no involvement of the map user in the more fundamental problem of the map's information content, e.g., the number of road classes which should be shown.

Sometimes map users volunteer their opinions without invitation. However, the examination of the letters received by Alberta's Department of Highways, in connection with the Official Alberta Road Map, reveals some of the limitations of this approach (see Chapter III).

2. Meetings Between Map Users and Map Producers

Within North America, meetings of this nature have taken the form of sporadic conferences. These conferences, which have been held in both Canada and the U.S.A., have been predominately concerned with the map use and map requirements of government departments as opposed to the public.

In the U.K. the Ordnance Survey has five standing laison committees. These meet annually. Four committees bring together representatives of various levels of government. The fifth committee ("Map User") represents users from non-governmental organizations. This committee presents to the Ordnance Survey the opinions of learned, professional, and recreation bodies, as well as other users.

Sometimes a special meeting of map producers and map users is organized. The meeting held at the Royal Aircraft Establishment (Farnborough, England) in October 1967 is one such example. Here representatives from government and commercial bodies met to examine aviators' requirements for aeronautical charts and other forms of map display.

A similar meeting was held by the U.S. (Departments of the Army and Navy) in Washington, D.C., between November 18-20 in 1969. The justifications for this meeting included the fact that between 1958-1962, 82 aircraft had been destroyed and 122 people killed because of navigational disorientation; and comments from pilots that, "if the chart presents the information that is the most useful to the pilot it hardly matters how badly it is portrayed" (McGrath, 1971, p. 79).

3. Surveys of Map Users

McGrath and Kirby (1969, p. 133) distinguish three categories of map-user surveys:

1. "Those undertaken by the responsible mapping agency, civilian or military,[1]... Surveys of military users have been designed to cover a wide range of products at varying scales,[2] or specific maps and map substitutes.[3]

2. Those undertaken by an independent organization on

behalf of a mapping survey*.

3. Those undertaken by private investigators". (The present study of the 1974 Official Alberta Road Map illustrates this category.)

Although all map user surveys can be easily classified into one of these three general categories, a problem often arises when an attempt is made to describe the purpose of a particular survey. This is generally associated with defining the characteristics of the population surveyed.

In an attempt to alleviate this problem, McGrath and Kirby (1969) state that the objectives of any survey can be defined in terms of the "heterogeneity" or "homogeneity" of its interests. Using this terminology, a survey of users of any topographic map would be classified as having a homogeneous interest. That is, the survey is designed to supply information only on this one type of mapping. A survey of users employing different types of maps would be described as one having heterogenous interests. If the existing surveys are classified using these terms it can be concluded that the majority are homogeneous, and have been conducted by non-commercial producers to test their products (primarily topographic maps). In addition, within the homogeneous surveys, the users surveyed have been particularly specified, e.g., geographers, map librarians, etc. (Klawe, 1970).

THE ROLE OF THE MAP USER IN INFLUENCING THE CARTOGRAPHIC PRODUCT

Two views can be distinguished with reference to the role of the map user in influencing the cartographic product. The first view is that the user should be consulted by a survey and his requests summarized and implemented within the existing cartographic constraints. The survey may refer to an existing map product (as in the case of this study of the 1974 Official Alberta Road Map) or to potential use of an anticipated map product (as in McGrath, 1970). This view may be termed the deductive approach.

The second view is the inductive approach. In this approach the opinions of the map user are sought only after one or several experimental maps have been produced. This approach is favoured by some researchers (Keates, 1970 a.; Morrison, 1966), because they argue that the map user is often not aware of the possibilities and limitations existing for that product.

RESEARCH INTO THE USERS OF ROAD MAPS

> "Over 50 different versions of road maps and atlases have been available during the past few years to drivers in Great Britain, but very little direct information exists about the way they are used or the information that drivers require on them to find their way about." (Sheppard and Adams, 1972, p. 105).

Although made in reference to Great Britain, this statement is certainly applicable to North America as well. The writer's correspondence in December of 1973 with all the highway departments in Canada and the U.S.A. revealed that no user surveys of official road maps had ever been made.

Several surveys however, have been conducted by private marketing agencies for some of the large commercial firms producing road maps. Detailed results of these surveys are not available, although it is known that a survey for Rand McNally (date unknown) produced general comments such as "users thought atlases 'dull'" (Rand McNally, 1974). In the early 1960's two surveys were conducted in the U.S.A. for Esso. These surveys, conducted primarily by phone with some in-person interviews, found that "their maps were preferred in general over those of the nearest competitor" (General Drafting, 1973).

From these surveys it is evident that there has been no very detailed examination of road-map users. Nevertheless a number of firm general assumptions about road map users are current. For example, it is generally believed that few road-map users ever read the legend (Morrison, 1966).

Questions relating to the kinds of road information required have appeared in several map user surveys (McGrath, 1968; McGrath, 1970 a.). There have, however, been very few surveys specifically concerned with the detailed use of particular road maps. Also, those which do exist have been carried out in Great Britain. Thus caution must be used in applying the findings to North America. For example, there are many differences in geography, kinds of maps available, and map reading education between Great Britain and Alberta.

Two recent surveys in Great Britain have revealed general information about road maps and road-map users. Kirby's survey (1970) was concerned with the possession and use of selected maps and atlases by members of certain societies. From his results he concluded that the most important "leisure use" of atlases was "route planning and motoring". But he also found that the road atlases, containing coloured maps at topographic scales, served many other functions. With regard to the information content of road maps, he found that they appeared to lack "landmark information" and "specialist information" required by the drivers. These findings support the predictions of Morrison (1966) and the conclusions of Astley (1969).

The 1970 market research conducted on The Changing Profile of the Map User confirmed that motoring was the principle factor in map usage in Britain (Drewitt, 1973). Of the people surveyed, 58% listed motoring as an outdoor activity. Eighteen percent of the non-map users also stated that motoring was an outdoor activity in which they participated. It was also predicted that, due to the present trend toward increased interest in outdoor recreation and travelling, the importance of road maps will continue to grow.

The earliest specific survey on road maps in Great Britain was made in 1963 by the Consumers' Association. A similar survey was repeated by them in 1971. The 1963 survey investigated 28 road maps and 23 road atlases. An attempt was made to discover, for both long and short journeys, the informativeness, legibility, and folding convenience of these maps. Both surveys were subjective. For example, in the 1963 survey, a total of six people judged the maps and atlases. Three were experienced motorists, two were geographers, and one was a typographer. Their opinions were assessed by means of a detailed questionnaire followed by field tests of their use of the map products in 1,500 miles of road tests. In their conclusions the three motorists stated that they were well served by the available road maps. The typographer stated that, "geography apart, the maps were graphically amateur and mostly low grade when compared with other types of graphic work" (Consumers' Association, 1963, p. 202). The geographers concluded that there had been little improvement to motoring maps since the Michelin Maps of the 1920's.

Twenty nine maps and 10 atlases were tested in the 1971 survey. Similar techniques were used; that is, a panel of experts (8), a detailed questionnaire, and field tests. The panel found that on many route-planning maps [maps with a maximum scale of 1 inch to 8 miles (1:506,880)] there was insufficient contrast between the different road classes. They also concluded that touring maps contain a lot of useful information, but were generally difficult to read. Atlas maps were found to be clearer than the individual sheet maps published by the same firm. In addition, some maps were found to be significantly more legible for night driving or for colour-blind people.

A more objective investigation was carried out again in Britain, by Astley (1969). This study was designed to find out what types of road maps were used; the reasons for preferences between maps; and what kinds of information the user wanted from his maps. Three hundred people were interviewed in cafeterias at a motorway (M1) service station. Forty percent of the respondents were truck drivers, and the majority of the other 60% were professional drivers (travelling salesmen, etc.).

Concerning the type of road map favoured, Astley found a strong preference for folded maps over road atlases. The most frequent reasons given for this were the low cost of folded maps and the continuity offered by the large area of the sheet. In addition, the survey showed that nearly half of the respondents used a written route guide of some description, the majority writing their own from maps.

The map users indicated that an increase in the kind of amenities shown on the map would be useful. The features desired included 24-hour service stations, eating places, and public toilets. Other map features were named as redundant by many respondents. Among these were rivers, railways, churches, and ancient monuments. Many map users also desired some indication of the "traffic worthiness" of roads, e.g., whether a specific road is liable to congestion, flooding and so on. This finding supported the prediction of specialized road maps made by Morrison (1966).

In the investigation undertaken by Sheppard and Adams

(1972), the survey included an experiment involving map reading tasks. The maps used, [produced by Philips (Shell Motoring Maps) and the Ordnance Survey,] were at a scale of 1/4 inch to 1 mile (1:253,400). This survey of "Drivers' Opinions on Maps for Route Finding" was part of a larger survey undertaken to determine the effects of publicity about drinking and driving. The sample randomly selected was 128 male owners of vehicles classified as "private" living within a 16-mile radius of Reading.

The questions relating to the use of road maps confirmed all previous research that most drivers expect to need a road map at some time. Similarly, the survey supported Morrison's (1966) assumption that the general standard of map reading in Great Britain is high.

In the choice of route finding, the route selected was influenced by the weather conditions expected. It is, however, interesting to note the importance placed on other features, such as rivers, for identifying particular points of a route.

The differences in the presentation of relief, road information, and names on the maps employed for the tests, were reflected in the drivers' map preferences. The Philips map had been specially designed for the motorist, with relief represented only by spot heights, and with more emphasis placed on the road and names information. By contrast, the Ordnance Survey map placed a greater emphasis on relief, which was indicated by spot heights, hypsometric tints, and hill shading.

Although the survey found that users' preferences for maps appeared to depend somewhat on their familiarity with a particular map, conclusions on drivers' requirements in general were made. The survey showed that 57% of the total population wanted some indication of relief. Nevertheless, the majority of the respondents preferred the Philips map because it was easier to read. Ninety-one percent of those preferring the Ordnance Survey map said this was because they wanted relief to be shown in some detail.

The majority of respondents indicated amongst other things a desire that every small village with a name should be included. This illustrates the cartographer's nightmare, that is, the common tendency for people to say they want everything without realizing the implications (Ogilvie, 1971).

All the previously cited research on road-map user surveys has been deductive in its methods. Morrison (1966, 1970 b., 1974), on the other hand, has used the inductive approach to this problem. He believes that there are often many factors involved in choosing a route which the available map information does not allow the user to consider.

Morrison (1966) recognizes that the user of a road map may require information on where roads exist; what types of traffic can and may use them; what is the best route, and what is meant by the "best"; and how to follow the specific route chosen. With these points in mind, Morrison's article (Principles of Road Classification for Road Maps,) considers over thirty possible road classification criteria. Among these are journey cost, journey time, and route passibility. Unfortunately, many of the criteria considered could not be presented on a road map because of the difficulty in obtaining the data. In any case, he concluded that journey time, although it is not the only factor that drivers consider, is probably the main factor in selecting a route.

Based on this observation, experimental maps of road traffic speed were designed for a very specific population (a British business man with an above-average map-reading ability). These maps are significantly different from the conventional road map (Morrison, 1970 b.). Since road speed maps have a single purpose, it is relatively easy to devise tests for their efficiency. In testing these maps, Morrison (1974) concluded that they gave results superior to conventional road maps in every combination of circumstances where the minimum-time route was sought. If used by motorists in general, they would presumably have resulted in a significant saving of total travel time. Although Morrison concluded (when considering scale and cost of production) that the most favourable scale would be 1:250,000 (1 inch to nearly 20 miles), it is doubtful whether such maps would be applicable to many areas of Canada. Due to the large geographic areas involved, there is often only one route between centres.

Few research projects are currently being conducted concerning road-map usage. In the United States, the Federal Highway Administration and West Virginia Department of Highways are presently sponsoring a travel project to determine the kinds of trips undertaken by motorists and the types of problems encountered by the motorists while planning their travel and while actually on the road. Several questions on the questionnaire associated with this project refer to the driver's map holdings and to the map information which is required both before and during travel. To date, however, no results of this research are available.

Similarly, no details are available on the survey of West German Motorists' map requirement, proposed by Dr. K.H. Meine.

SUMMARY

Several suggestions have been made by the writer to account for the lack of research into map users. The examination of the techniques that have been used by other researchers to obtain map users' opinions has illustrated some of the problems which face a researcher in this field. Similarly, the detailed description of the few road-map user surveys which have been completed should demonstrate how little is really known of the particular users personal characteristics and information requirements. In addition, it has been shown that what little is known applies primarily to Great Britain and not North America.

FOOTNOTES

[1] "Map Use Research. Final Report of Map Use Research Section, Office of Programe Development." Washington, D.C.: U.S. Geological Survey, Topographic Division. November 1960. pp. iii and 45

[2] For example, J. Skope, "Investigations of user requirements pertinent to cartographics. Map scales required for tactical use." Washington, D.C.: Army Map Service, User Requirements Project No. 24. First Interim Report. May 1959. pp. ii and 13, with Annexures

[3] Questionnaires were used in the evaluation of the following products:

(i) Pictoline Town Plan as a substitute for the Conventional Town Plan. Directorate of Military Survey, Ministry of Defence London.

(ii) Low Level Pilotage Chart. Mapping and Charting Establishment, Canadian Forces, Ottawa.

(iii) Joint Operations Graphic, 1:250,000, Series 1501 and 1501 Air. NATO.

[4] For example, a study was conducted in 1968 by the Systems Development Corporation, Santa Monica, California, on behalf of the U.S. Geological Survey, using two questionnaires circulated to some 3,500 users of Federal, State, country, city and private occupations, and to 1,500 users in the fields of education and recreation.

CHAPTER III

THE HISTORY AND DEVELOPMENT OF THE OFFICIAL ALBERTA ROAD MAP

> "They (road maps) are simple maps to show how to go from here to there, and that's about all they do - they rarely have other kinds of information on them. Sometimes they put on state boundaries that can be confused as highways". (Mclune, 1970 p. 51)

> "I wish the road map was as simple as he (Mclune) described it. I wish we were able to leave off campsites, points of interest, historical points, ruins ad nauseum". (Ogilvie, 1970 p. 51)

Despite the paradox illustrated in the above statements, the road map is widely used by a large sector of today's population. This is a very different situation from the one which existed in Western Canada during the 1920's and 1930's. In that period motor vehicle ownership was confined to a relatively small percentage of the population, therefore few road maps were produced. Nowadays it is the minority of the population who do not possess or have access to a motor vehicle. This factor, coupled with the user's desire for accurate up-do-date information in times of very rapid change, makes the annual revision of road maps a common practice.

The annual production of road maps makes an evolutionary study interesting. This examination is further enhanced by the element of competition involved in road map production. Road maps remain one of the few map products produced by private industry in the largely government dominated field of map making. In addition to revealing the history and development of the transportation network and associated features (e.g., settlement location and growth), an evolutionary approach provides an opportunity both to study the application of different cartographic techniques and to account for numerous aspects of the present edition.

This chapter considers the history and development of the Official Alberta Road Map in an attempt to offer an explanation for the current format, map scale, method of folding, information content, symbolization and map design. Such an examination, in addition to revealing and accounting for current content and design, provides information on phenomena previously included and subsequently omitted. It must be remembered that the examination of content in this section reflects the development of the province. Also included in this chapter is a brief examination of user's complaints received prior to September 1974 by the

Department of Highways.

Numerous problems were encountered in obtaining data relevant to the production of the road map. There are no official records. Therefore the information had to be obtained by reference to the original cartographic compilations where available, printed maps and personal communication with people involved in the production of the map.

HISTORY OF THE PRODUCTION OF THE ROAD MAP

Alberta's first official road map was produced in 1924 (Plate 3-1). In the early 1920's several road maps were available to the general public. One of the major map authors was the Alberta Motor Association. They were responsible for numerous maps each showing a different section of important highways in Alberta e.g., Edmonton to Lloydminster. Other maps available included "Motor Roads to the Rockies", published in 1920, at the scale 1 inch to 18 miles (1:257,120). This map was issued by the Calgary Good Roads Association. It would appear, however, that no map showing the road network of the whole of Alberta, except on an extremely small scale, preceeded the official map of 1924.

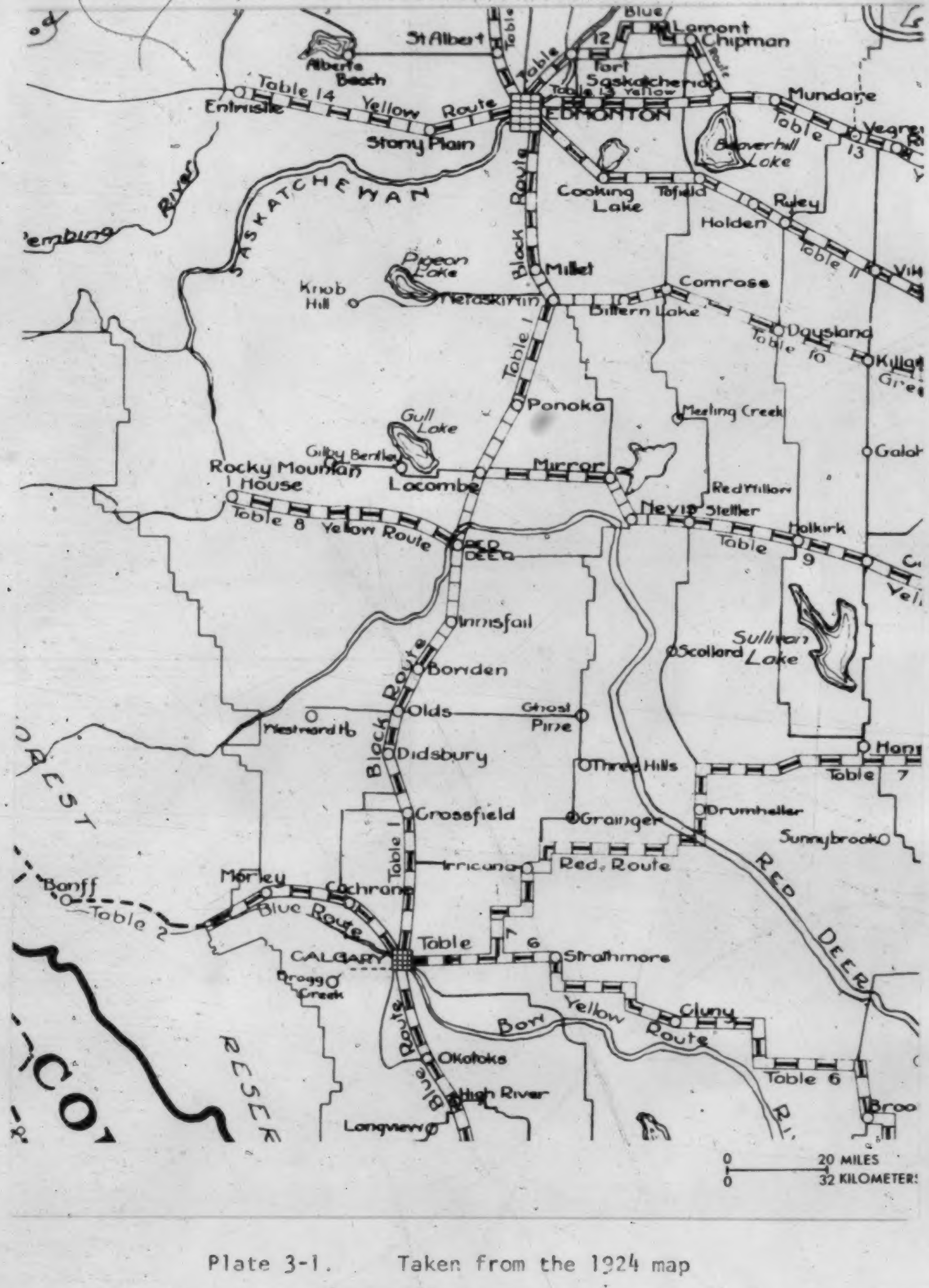

St Albert
Alberta Beach
Blue
Lamont
Chipman
Table
12
Fort Saskatchewan
Table 13 Yellow
Table 14
Yellow Route
Entwistle
Stony Plain
EDMONTON
Mundare
Table 13
Vegre
Beaverhill Lake
Cooking Lake
Tofield
Ryley
Holden
Table 11
SASKATCHEWAN
Pembina River
Black Route
Millet
Pigeon Lake
Knob Hill
Wetaskiwin
Camrose
Bittern Lake
Daysland
Table 10
Killam
Table 1
Ponoka
Meeting Creek
Gull Lake
Gilby Bentley
Galahad
Rocky Mountain House
Lacombe
Mirror
Red Willow
Nevis
Stettler
Halkirk
Table 8 Yellow Route
Red Deer
Table 9
Sullivan Lake
Innisfail
Scollard
Borden
Olds
Ghost Pine
Westward Ho
Didsbury
Three Hills
Hanna
Table 7
Crossfield
Grainger
Drumheller
Sunnybrook
Irricana
Red Route
Banff
Morley
Cochrane
Table 2
Blue Route
Table
7
6
CALGARY
Strathmore
Bragg Creek
Bow
Yellow Route
Cluny
Okotoks
High River
Longview
Table 6
Brooks
RED DEER
FOREST RESERVE
0 20 MILES
0 32 KILOMETERS

Plate 3-1. Taken from the 1924 map

Table 3-1 shows that the official map was not initially produced annually. In the early years this may be explained by the small number of cars in existence and the few roads suitable for motor travel. During and immediately after the war years, the continued trend of infrequent production stemmed from the problem of obtaining spare parts and rubber tires for motor cars. Only after 1948 was there a map produced annually.

Since then there has been an almost continuous increase in the number of maps printed. Figure 3-1 illustrates the dramatic increase in the numbers printed over the last ten years. In the eight years between 1966 and 1974 the number of official road maps issued has nearly doubled from 450,000 to 754,200. Since 911,600 maps were published in 1975 it would appear that this trend will continue.

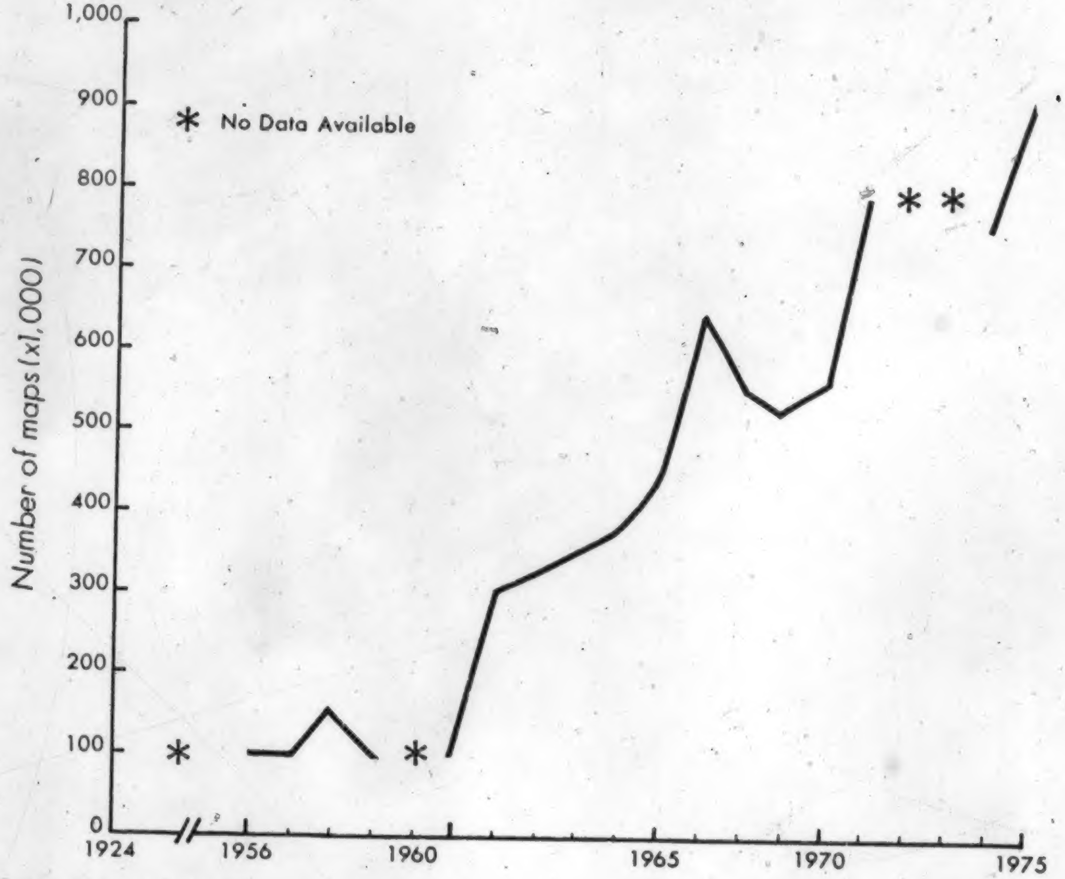
Reference to Table 3-1 shows that since the first appearance of the map three distinct periods of production can be identified. The first era is from 1924 to 1960 inclusive. Initially during this period the producer (indicated on the map) was the Department of Public Works. From 1952 however, the Department of Highways appears on the map as the producer. In reality no change in producer occurred. Expansion in the Department of Public Works led to the creation of the section "Highways Construction Branch",

Table 3-1. YEARS WHEN OFFICIAL ALBERTA ROAD MAPS WERE ISSUED, AND PRODUCING AUTHORITY

Year		Producing Authority	
1924		Department of Public Works	Period 1
1930			
1932			
1934			
1938			
1939			
1940			
1942			
1946			
1948			
1949	→ 1952		
1953	→ 1960	Department of Highways	
1961	1966	Gousha	Period 2
1967	Present day	Department of Highways Mapping Branch	Period 3

Source: Research Data, 1974.

Figure 3-1. NUMBER OF OFFICIAL ALBERTA ROAD MAPS PRODUCED, 1956-1975



Source: Research Data, 1975

which was given the task of producing the map until 1960. Then the decision was taken to subcontract the production of the map to Gousha. The production of the map by Gousha from 1961 to 1966 can be recognized as the second distinct phase. At that time this commercial firm had a virtual monopoly of road map production in Western North America, publishing road atlases, automobile association material, oil company maps and official state road maps. It was believed that because Gousha produced such a diversity of material used by the motorist, an Alberta Official Road Map designed along similar lines would be advantageous. The motorist would have little problem accepting the content, symbolization, and map design. In addition the map would compare favourably with other road maps available.

1967, centennial year in Canada, saw the beginning of the third period of production. Then the complete cartographic production of the road map was in the hands of the Department of Highways, Mapping Branch. Several reasons account for this change in policy. Although Gousha had produced the cartographic map image between 1961 and 1966, all the compilation and revision information required by them had been supplied by the Department of Highways in conjunction with other government departments. The revision material supplied was also used by Gousha to up-date their other products. Thus the government of Alberta has been paying to have a map produced for which they had been doing a large amount of the work. As the Department of Highways Mapping Branch had the personnel and the equipment necessary to carry out all the cartographic work, the production of the province's official road map was undertaken as a centennial project.

Each of the three periods of organization exerted its own influence on format map scale, folding, information content, symbolization and map design.

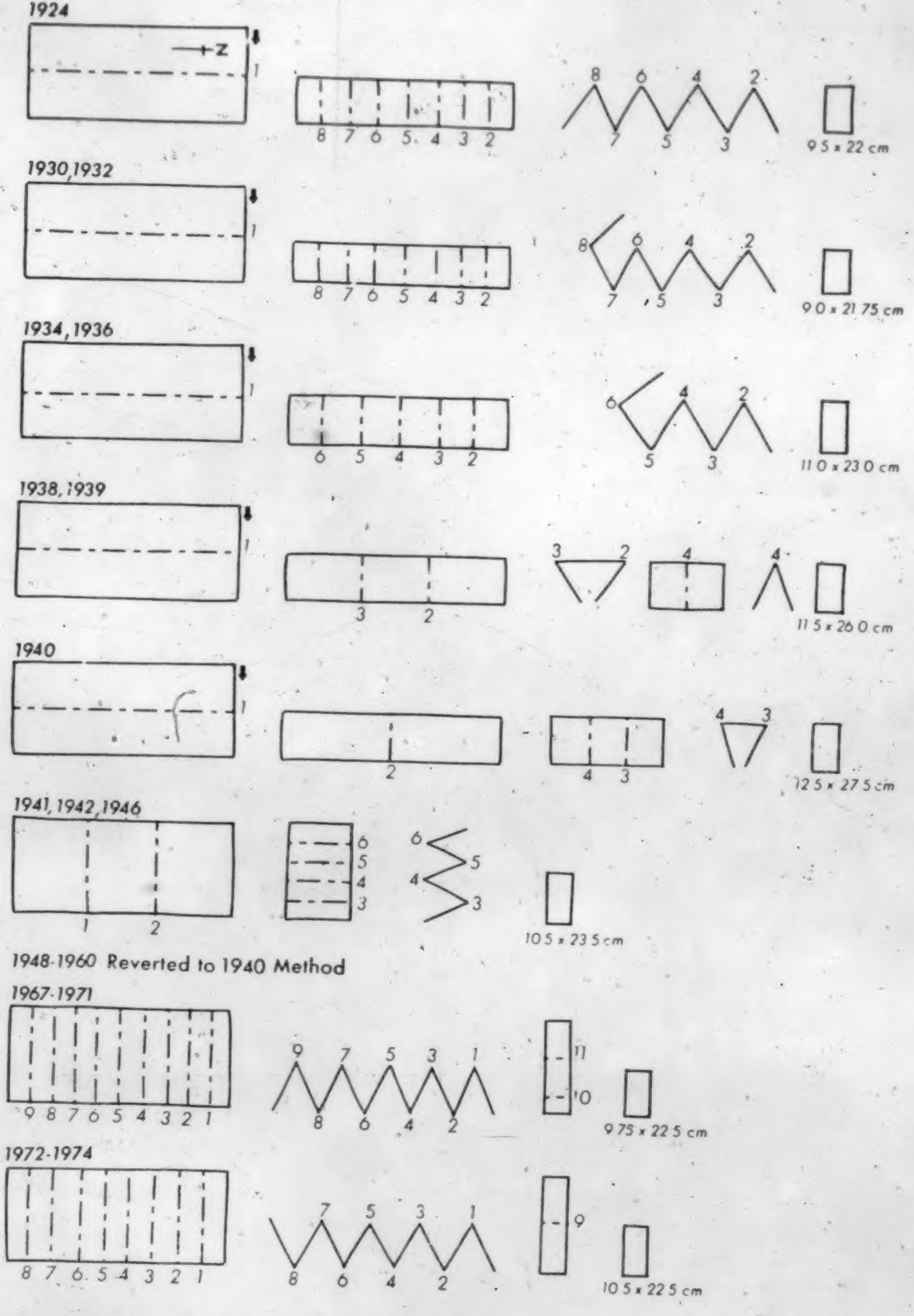
FORMAT, MAP SCALE, AND METHOD OF FOLDING OF THE ROAD MAP

Logically, when considering the map area only, an examination of these three items should reveal a relationship. A scale change should be accompanied by a change in format dimensions which may or may not produce a change in folding method.

Period of Production 1924-1960

An examination of Figure 3-2, and Table 3-2 shows there were many changes in format, map scale and folding in this period. The same map area and map scale appears on two different formats (1924, 1930). There are also maps which have the same map scale, map area and similar formats but

Figure 3-2. FOLDING METHOD USED FOR OFFICIAL ALBERTA ROAD MAP, 1924-1974


1924
Z
1
8 7 6 5 4 3 2
8 6 4 2
7 5 3
9 5 x 22 cm
1930,1932
1
8 7 6 5 4 3 2
8 6 4 2
7 5 3
9 0 x 21 75 cm
1934, 1936
1
6 5 4 3 2
6 4 2
5 3
11 0 x 23 0 cm
1938, 1939
1
3 2
3 2
4
4
11 5 x 26 0 cm
1940
1
2
4 3
4 3
12 5 x 27 5 cm
1941, 1942, 1946
1 2
6 5 4 3
6 5 4 3
10 5 x 23 5 cm
1948-1960 Reverted to 1940 Method
1967-1971
9 8 7 6 5 4 3 2 1
9 7 5 3 1
8 6 4 2
11
10
9 75 x 22 5 cm
1972-1974
8 7 6 5 4 3 2 1
7 5 3 1
8 6 4 2
9
10 5 x 22 5 cm

Source Official Alberta Road Map, 1924-1974

Table 3-2. MAP SCALE AND FORMAT OF OFFICIAL ALBERTA ROAD MAP, 1924-1974

EDITION AND YEAR	FORMAT SIZE IN CENTIMETERS													MAP SCALE
	59 x 45.25	62 x 46.75	62.5 x 46.5	62.5 x 47	65.5 x 43	68.5 x 42.5	68.5 x 52	71 x 46	71 x 52	74.5 x 55.5	87 x 55.75	88.5 x 61	92.25 x 50	
Edition 1														
1924					●									*1:1,900,800*
1930						●								*1:1,900,800*
Edition 2														
1932,1934								●						*1:1,561,690*
Edition 3														
1938							●							*1:1,408,000*
Edition 4														
1939				●										*1:1,584,000*
Edition 5														
1940										●				*1:1,545,365*
1941									●					*1:1,632,989*
Edition 6														
1942									●					*1:1,632,989*
Edition 7														
1946									●					*1:1,632,989*
1948-1954			●											*1:1,863,529*
Edition 8														
1955-1956		●												*1:1,885,715*
1957-1960	●													*1:1,980,000*
Edition 9														
1961-1966											●			*1:1,760,000*
Edition 10														
1967-1971												●		*1:1,584,000*
1972-1974													●	*1:1,584,000*

Source: Official Road Map, 1924-1974

receive different folding treatments (1940, 1941). Therefore, for this period the relationships between these elements are considered in connection with the different map editions printed. The number of editions produced during 1924-1960 can be related to the nature and number of revision corrections which it was necessary to incorporate. Since minor corrections, (such as the reclassification of an existing road, or the inclusion of a new minor road) could be incorporated directly to the map base, the same edition of the map appeared for several successive years. To incorporate a large number of revisions or a major change, such as an increase in the line width of major roads, necessitated the construction of a completely new cartographic base. Thus a new map edition appeared.

The type of map produced was directly related to the cartographic technology available, and therefore this also receives some study in the examination of the various map editions. There is also a brief consideration of additional information appearing on the reverse side of the road map since it would appear that this exerted a major influence on the elements under discussion.

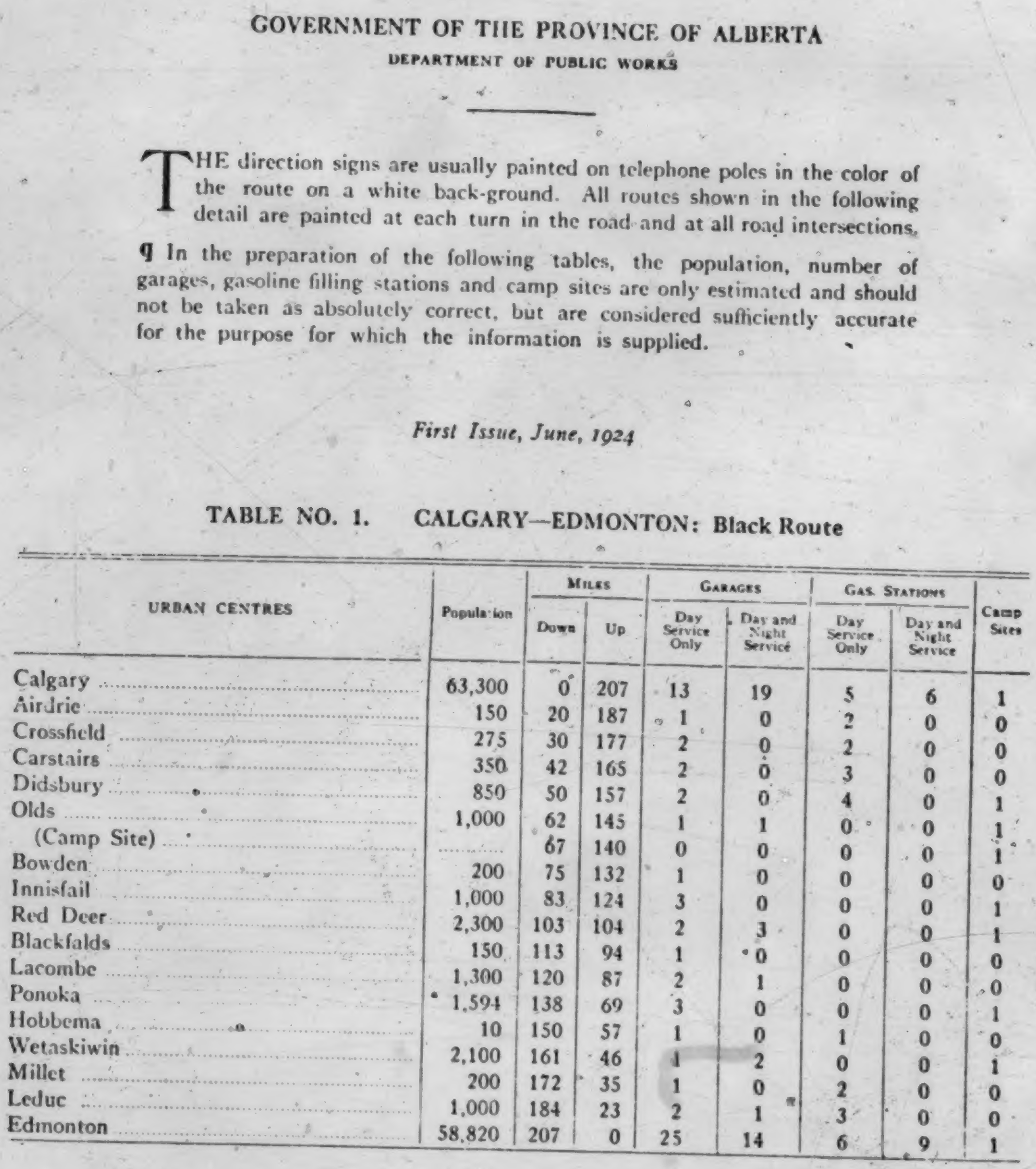
1. 1924/1930 Edition. Although the 1924 and 1930 maps have the same map scale (Table 3-2) they differ slightly in

format, and folding (Figure 3-2). It is unlikely that the map used for this edition was produced in Alberta. Prior to 1932 Ottawa was responsible for supplying all the maps depicting the province. These were printed in Winnipeg. From an examination of the original maps it would appear that the scale of the original drafted copy was also that of the printed maps. Evidence supporting this statement is that the maps carry a verbal scale only, and the hand printed lettering does not appear to have been reduced, although the necessary equipment was available at that time.

The difference in format and folding between the two maps may be attributed to the inclusion of additional information. Each map failed to incorporate information important to the user, the motorist. The omission of mileage distances between the settlements is a good example. Two solutions were presented to alleviate this problem. The 1924 map was issued with a small eight page booklet. This contained the information on mileages in a tabular form together with information relating to gas stations, garages and campgrounds. Page 1 of the booklet has been reproduced as Table 3-3. On the 1930 map these tables (updated) were printed on the reverse side of the map.

No information was contained on the reverse side of the

Table 3-3. PAGE 1 FROM THE BOOKLET ACCOMPANYING THE 1924 OFFICIAL ALBERTA ROAD MAP



GOVERNMENT OF THE PROVINCE OF ALBERTA

DEPARTMENT OF PUBLIC WORKS

THE direction signs are usually painted on telephone poles in the color of the route on a white back-ground. All routes shown in the following detail are painted at each turn in the road and at all road intersections.

¶ In the preparation of the following tables, the population, number of garages, gasoline filling stations and camp sites are only estimated and should not be taken as absolutely correct, but are considered sufficiently accurate for the purpose for which the information is supplied.

First Issue, June, 1924

TABLE NO. 1. CALGARY—EDMONTON: Black Route

URBAN CENTRES	Population	Miles		Garages		Gas. Stations		Camp Sites
		Down	Up	Day Service Only	Day and Night Service	Day Service Only	Day and Night Service	
Calgary	63,300	0	207	13	19	5	6	1
Airdrie	150	20	187	1	0	2	0	0
Crossfield	275	30	177	2	0	2	0	0
Carstairs	350	42	165	2	0	3	0	0
Didsbury	850	50	157	2	0	4	0	1
Olds	1,000	62	145	1	1	0	0	1
(Camp Site)	....	67	140	0	0	0	0	1
Bowden	200	75	132	1	0	0	0	0
Innisfail	1,000	83	124	3	0	0	0	1
Red Deer	2,300	103	104	2	3	0	0	1
Blackfalds	150	113	94	1	0	0	0	0
Lacombe	1,300	120	87	2	1	0	0	0
Ponoka	1,594	138	69	3	0	0	0	1
Hobbema	10	150	57	1	0	1	0	0
Wetaskiwin	2,100	161	46	1	2	0	0	1
Millet	200	172	35	1	0	2	0	0
Leduc	1,000	184	23	2	1	3	0	0
Edmonton	58,820	207	0	25	14	6	9	1

Original Scale 7.5 ins. X 9 ins.

1924 map and therefore it could be folded in any manner desired by the user. The 1924 map which was examined had been folded using the concertina method, to produce eight panels (Figure 3-2). This made the map a comparable size to the booklet, enabling the map to be slipped inside the booklet. Incorporating the tables in addition to "some rules which every motorist should observe" (1930 Map) in an easy and legible manner on the 1930 map dictated the small modification in format dimensions. The direction modification of the concertina fold, exhibited in the 1930 version (Figure 3-2), produced a neat, easily handled booklet.

2. 1932/1934 Edition. The changes in format and map scale exhibited by this edition when compared to the earlier road maps may be explained in part by reference to the map design. In accordance with earlier practice Ottawa probably supplied a base containing the most recent hydrographic and road information available for the whole province. However a decision made within the province resulted in the omission of the northern area, the cut off point being around the 58°N paralled. Thus a larger scale could be used for the area of Alberta represented, with only a slight increase in format.

The 1932 map was the first to be printed in colour (Plate 3-2). Three colours were used: red, blue and black. This map was probably produced on linen, as were the previous ones. The drafted map was sent to the printer who photographically reduced it. Three negatives were produced. Each negative corresponded to one of the colours of the image after the redundant information had been opaqued out. From these negatives the plates were made.

The 1932 map was also the first to be issued by a Publicity Commissioner. It was distributed in an envelope which carried the inscription, "Includes a brief description of the province and its resources and general information for the tourist" (Reference 1932 map). In addition to this information on the map there was a mileage table and information on, "Hints on the aquisition of the map". The following statement appears: "May be purchased on news stands, in hotels etc., in the province of Alberta or may be secured from motor associations, boards of trade and other organizations authorized to handle the same...." (Additional information 1932 map).

The modification in the folding of the 1934 map (decrease in the number of panels) may be accounted for by a modification in content and arrangement of the additional information included (Figure 3-2).

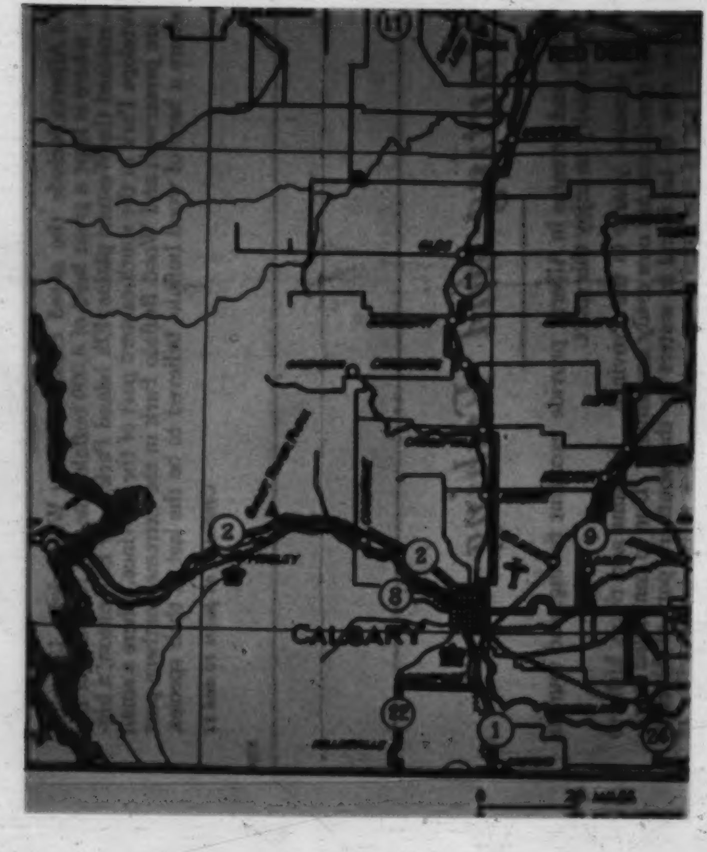

CALGARY
11
1
2
2
8
9
22
1
24

Plate 3-2. Taken from 1932 map

3. 1938 Edition. This new edition was probably necessary because of the difficulty of adequately incorporating in the previous edition completely new information such as the mileage distances between centres. There is, however, no reason for the change in map scale. The slight decrease in the amount of the northern area of the province does not explain the change in map scale, or format dimensions. Once again the complete change in folding may be ascribed to the incorporation of the additional information. City insets appear for the first time, the city insets of Edmonton and Calgary being included.

4. 1939 Edition. A new edition was produced in 1939 which was not in accordance with the pattern of map production in previous years. An examination of all previous editions shows that the same edition provided road maps for several successive years. The production of a new edition may have resulted from the availability of more recent information. There is an increase in the amount of drainage detail presented. Perhaps a more plausible reason may be found in the cartographic techniques used to produce the lettering on the map. On the previous maps, except for the legend of the 1938 map, all the lettering was freehand. On this map however, it would appear that some form of stencil was employed for all but the very large lettering, such as the

province names, which were still done by hand. This map was the first official road map to be issued free to the public.

5. 1940/1941 Edition. The creation of another edition in 1940 may again have been influenced by a change in cartographic techniques (Plate 3-3). The 1940 map exhibits the first extensive use of "stick on type". Previously the use of preset type had been confined to small areas only e.g., legends. The use of preset type and design changes, such as the introduction of an arbitrary index, does not however, explain the differences in map scale and format existing between this and the previous edition.

The differences in format, map scale and folding between the 1940 and 1941 maps may again be assigned to the inclusion of additional information. It appears that the information on the reverse of the 1940 map, even with the inclusion of two more city insets, could be rearranged and presented successfully on a smaller format. The reduction of the format in 1941 resulted in the smaller scale map (Table 3-2). Easy access to this additional information may once again be indicated as the deciding factor influencing the method of folding (Figure 3-2).

6. 1942 Edition. Producing another edition identical in

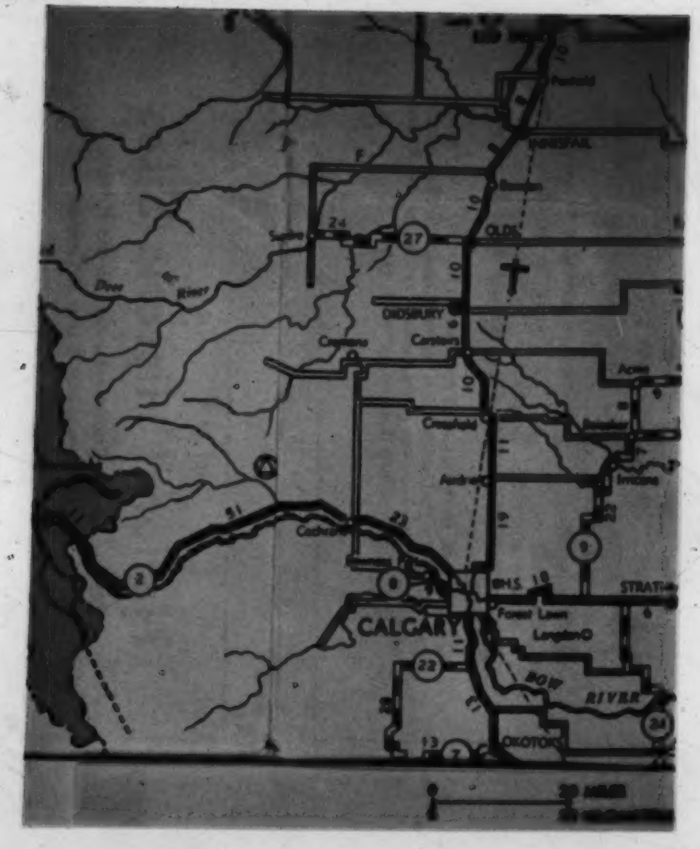

INNISFAIL
OLDS
27
24
10
DIDSBURY
Carstairs
Crossfield
Irricana
51
23
2
9
BMS
STRATH
CALGARY
Forest Lawn
22
BOW
RIVER
24
OKOTOKS
13
7
20 MILES

Plate 3-3. Taken from 1940 map

format, map scale folding to the previous one, can be attributed to the inability to incorporate the required revisions to the former edition. When compared to the prior edition, the 1942 map has a greater density of settlement names and local roads. Similarly there is an increase in drainage detail presented. This edition also appeared as a "war issue" (without a date), no revisions having been made.

7. 1946, 1948-1954 Edition. The loss of the cartographic material, in transit from the printers in Calgary, has been stated as the reason for the appearance of a new edition in 1946 (Plate 3-4). There are noticeable similarities between the 1942 and 1946 maps. Therefore it is probable that the 1942 edition provided much of the compilation material for the 1946 map, although more detail, particularly in the U.S.A., was included.

Modifications in the content and arrangement of the additional information caused the changes in format, map scale and folding of the maps produced between 1948-1954. Included in the additional information was an inset of Highway 35, from Grimshaw to Great Slave Lake. The ability to include this information on a smaller format, which was simpler to fold, initiated the changes exhibited by the 1948 and subsequent maps (Figure 3-2, Table 3-2).

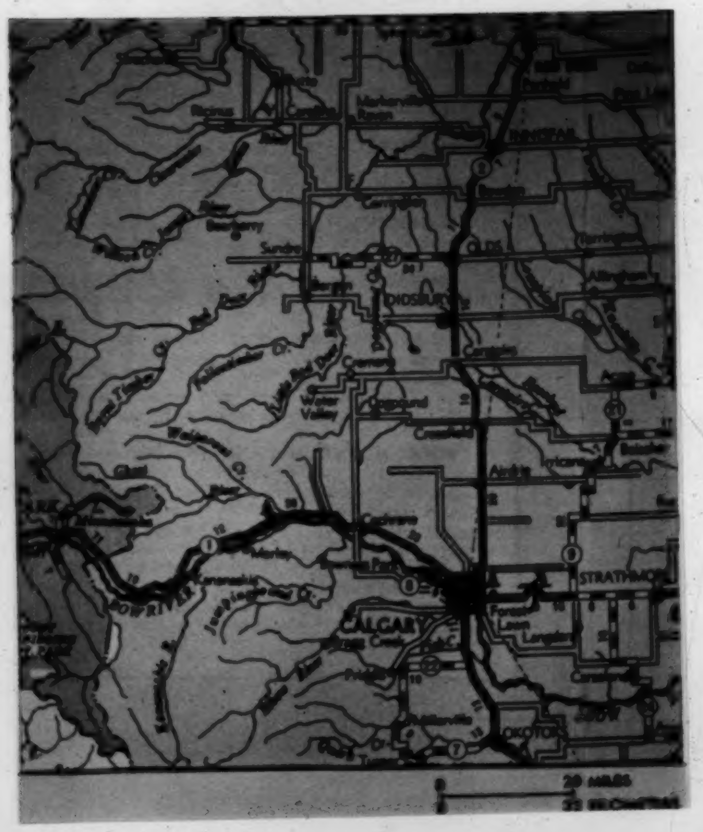

INNISFAIL
OLDS
DIDSBURY
Water Valley
STRATHMORE
BOW RIVER
CALGARY
OKOTOKS
20 MILES

Plate 3-4. Taken from 1946 map

The reasons why this edition served as a source of road maps for many years may be explained by several factors. Name corrections were easy to make, the names being simply removed and placed elsewhere. New names in the same type face were obtained by simply ordering them from the Monotype Company. During this period only minor revisions were made. Thus there was no reason to produce a new edition.

8. 1955-1960 Edition. (Plate 3-5). A new edition was produced in 1955 to celebrate the 50th anniversary of the province. Many new design aspects were incorporated. The reason why there was a reduction in format, and therefore in map scale can be attributed to the press used for printing the map. It is noticeable that the method of folding remained unaltered, as did the content and arrangement of the additional information (Figure 3-2). Despite the difference in design between this and the previous edition, there is remarkably little difference in the map information content presented.

It is interesting to note that this edition was produced so that the colour separation of the image could be prepared by the Department of Highways, and not the printers. Instead of one original drawing being produced on linen, separate images were produced for each printing

Plate 3-5. Taken from 1960 map

colour. This was done by producing one complete image from which several blue line images were made. These were produced in Ottawa from a base map drafted in Alberta. The blue line images printed on hammer paper were mounted on aluminium sheets 110 cm by 92.5 cm. Each sheet corresponded to one of the printing colours and therefore only the information to be printed in that particular colour was inked in or added. Having the complete image in pale blue enabled a check to be made ensuring no overlap or conflict of information on the different plates. Three sheets were produced corresponding to the red, black and blue printing plates. Since yellow, the fourth colour, was used solely for extensive areas it is probable that the corresponding printing plate was made from a photographically produced mask.

The long use of this edition may again be explained by the fact that no major changes were required. Thus the necessary corrections were made directly to the respective blue line image.

Period of Production 1961-1966 (Edition 9, Plate 3-6)

The complete change in format, map scale and folding can be attributed to a new producer (Figure 3-2, Table 3-2). The increase in format however cannot be accounted for by

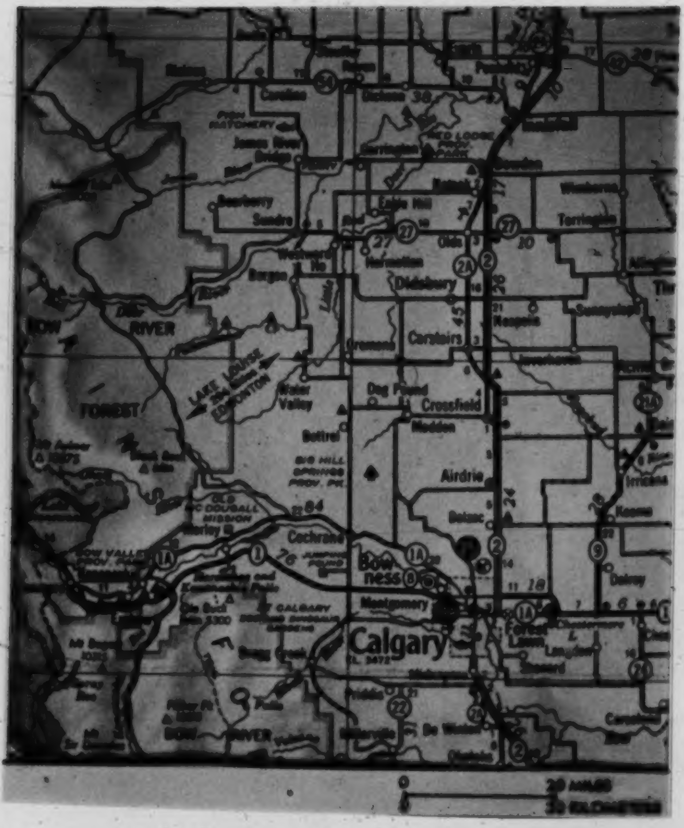

Calgary
Bow ness
Montgomery
Cochrane
Airdrie
Balzac
Crossfield
Madden
Dog Pound
Carstairs
Didsbury
Olds
Bergen
Sundre
Water Valley
Cremona
Forest Lawn
Langdon
Irricana
Dalroy
Torrington
Wimborne
BOW RIVER
FOREST
LAKE LOUISE
EDMONTON
0
20 MILES
0
30 KILOMETRES

Plate 3-6. Taken from 1961 map

the increase in map scale. For the first time the index of place names was printed on the same side as the road map.

Few details are available on how the map was produced. It would appear that the map was drafted as colour separated images, which were then reduced to printing size. It would also seem probable that the format was dictated by the printing press, and map folding machinery available. The additional information was then fitted to this format.

It was expected that there would be no alternations in the items under discussion because the initial cost of production would have to be recouped. This is borne out by the evidence on the map.

Period of Production 1967 to the Present Day (Edition 10)

Although the verbal map scales stated on both the Gousha and Highway Department editions are identical, "1 inch equals approximately 25 miles", the scales are different. On the Gousha map it is 1:1,760,000 (1 inch to 27.8 miles) whereas on the Highway Department's map it is 1:1,584,000 (1 inch to 24.7 miles). This discrepancy is insufficient to account for the differences in format dimensions. An examination of the 1967 map reveals that the whole of the province is included for the first time since 1930. There is also the movement of the place name index to the long axis of the road map. Figure 3-2, and Table 3-2 show that there were format and folding changes in 1972. These were the result of a change in the location of the index. By placing it at the top of the road map and having a concertina fold with only one other fold, easier access was possible to the complete index. Previously it was necessary to open the map to consult the index.

When the Department of Highways Mapping Branch took over the production of the road map they became responsible for all the stages of its preparation, excluding plate making and printing. They introduced scribing, producing all cartographic material at a scale of 1 inch to 20 miles (1:267,200), and thus the final product approximates to a 20% reduction. All the images were produced, colour separated so that corrections could be easily carried out. Each year the revision information is obtained by correspondence with numerous government departments, and individual personnel. These people are asked to predict what changes they expect to occur, e.g., creation of a campground, or upgrading of a highway, within the next year so that these can be incorporated into the road map for the following year.

MAP INFORMATION CONTENT OF THE ROAD MAP

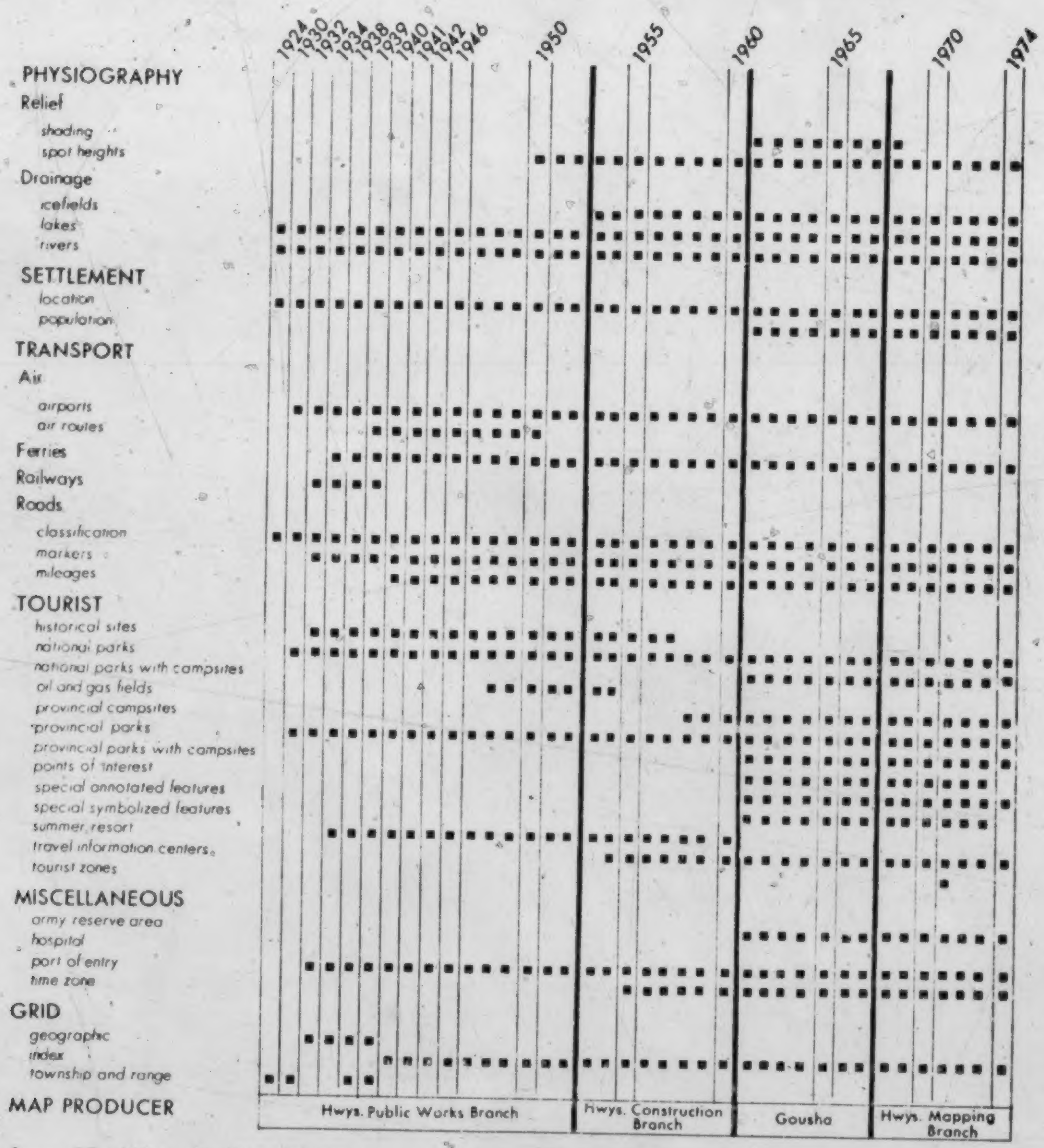
Table 3-4 summarizes the content of the 1974 map and indicates the various other phenomena which at some time have made an appearance. A brief examination of this table reveals that the content of the map increased between 1932 and 1940. There was little change until 1961, when Gousha introduced numerous features orientated towards the use of the map by the tourist. Since 1967 however, there has been a movement to limit information to improve the legibility and design of the map.

To facilitate a study of the information content, the content is reviewed under the headings listed in the table.

Physiography

1. Relief. An examination of relief and drainage is revealing. Prior to 1961 relief played a minor role. No relief features were indicated before 1950 when selected spot heights elevations were introduced. These were confined solely to the heights of the six major passes in the Rockies. Under Gousha, relief and elevation assumed greater importance. The general impression of relief was given by hill shading. Also elevations were extended to include the heights of numerous mountains and major cities. The Department of Highways Mapping Branch continued to represent

Table 3-4. INFORMATION CONTENT OF OFFICIAL ALBERTA ROAD MAP, 1924-1974



Source: Official Alberta Road Map, 1924-1974.

this information with the exception of the hill shading which was omitted after 1968. Noticeable differences may be discerned between the information given on the Gousha and Highway maps after 1967. Gousha gives Calgary an elevation of 3472 (there was no indication of unit of measure). Whereas on the Highways map Calgary drops by 32 feet to 3440 feet!

2. Drainage. When compared with relief, the presentation of drainage, during the period 1924-1960, illustrates the other extremes. Each successive edition portrays a denser network of rivers, lakes, creeks and streams. The drainage network was particularly developed in the northern area of the province where there was an absence of other features. Many of these features were unnamed. In 1961 Gousha reduced the number of rivers and creeks, and annotated all those portrayed. There was, however, no noticeable reduction in the number of lakes. Drainage information has continued to be an important part of the map since 1967, all features presented being annotated.

Settlement Information

The presentation of settlements on the road map reflects the development of the province. Initially only two classes were identified, city and village. With the expansion of the population more classes were represented although these were generally not explained in the legend. Settlements classified by population number first appeared in 1961. The classes introduced in 1961 continue to be shown to-day. From the smallest category, less than 250 people, it could be assumed that all Alberta's settlements qualify for representation. In reality only incorporated settlements (cities, towns, villages, hamlets) are shown, although an exception is made in isolated areas where small centres with a post office exist offering services important to visitors e.g., a food store, gas pumps.

Transportation Information

Reference to Table 3-4 shows that in addition to the road data, the map contains information relevant to other forms of transportation.

1. Roads. One of the most prominent features about road information is the number of classes (see Appendix C). On the first edition, the legend indicated eight road classes, each with a detailed description of expected quality of the surface under different weather conditions. From 1932 these descriptions disappeared. Between 1932 and 1946 five classes were shown although the exact terms applied to the classes varied over the years. In addition to these classes, roads

on the map were annotated "under construction", "summer road only" etc.

The increase to seven classes in 1948, and eight in 1958 resulted from the ability to apply a more rigid breakdown. This was possible because of road surface improvements. In 1948 district roads were subdivided into "gravelled" and those simply "graded". In 1958 paved roads with four lanes were distinguished from those with two lanes. Throughout the period 1924-1960, accompanying the increase in road classes, there was also the tendency to include on the map as many roads as possible, both inside and outside the province.

Both these trends were reversed in 1961, when six classes were shown and many of the district roads were omitted. Gousha's six classes however, are misleading. Within three of these different symbolization is used to distinguish between major, secondary and district roads.

Further reduction in the number of road classes occurred in 1967, although the number of roads shown remained comparable. Despite the fact that the same five classes introduced in 1967 appear on the 1974 map, there has been a decrease in the amount of road information shown. An explanation for this may be offered by the decision in 1971 to reclassify all Alberta's roads. From 1972 the road map showed only primary highways, secondary roads and other roads leading to campsites, parks or communities not served by secondary roads. The removal of all other roads resulted in the noticeable differences in the number of roads shown on the 1972 and 1973 maps. (For 1973 map see Appendix D).

Associated with road classes, there should also be a consideration of complementary data. Included in these are mileage distances, and route identification. The importance of ferries must also receive mention as in the past their location was essential to successful route planning.

Mileage information is presented in three ways on the current edition. What is now classified as "between towns and junctions", was the first type of mileage to appear on the map. Initially however the mileages indicated were only those between settlements. This information has always been given exclusively for major roads. In 1938, this method was supplemented by "written long distance mileage". On the current road map represented by this method are total mileages between centres in the province and major centres outside the province. The third means of giving mileages, "accumulated mileage" appeared in 1955.

The mileage chart is another means of presenting mileage information. Since 1932, mileage in a table or chart form has appeared on nearly all the Official Alberta Road Maps. With the exception of the 1974 map, this information has always been placed on the reverse side of the road map in the additional information.

Route identification, first shown on the 1932 map, remained confined to major routes until 1972. Since then many secondary routes have also received identification.

2. Railways. Railways appeared on the map during the period 1932-1940. Although useful for orientation, it was decided to omit them as this information was readily available elsewhere.[1]

3. Airports. Unlike railways, air information is considered important to the motorist. Several periods may be distinguished, with reference to the amount of information contained on the map. Although airports have been symbolized since 1932, normally no distinction was made between the types of airports. Gousha however separated "scheduled air line stops" from "others". For a short period of time, when the airplane was being used to open up Alberta, air routes and their destinations also appeared on the map.

Tourist Information

A comparison of the contents of the various maps, shows that between 1961 and 1967 the map was dominated by information of prime interest to the tourist. Since then, there has been a move to reduce this information.

Between 1924 and 1961 numerous items of interest to the tourist were included. Few of these remain to-day. Only the National and Provincial Parks and Provincial Campgrounds can be traced. Other features such as "historical sites" and "summer resorts" appeared for short periods of time.

The greatest increase in "tourist orientated information" displayed, occured in 1961. This took the form of increased campsite information, and the introduction of "points of interest". The increase in campsite information is self explanatory (Table 3-4). Several types of "points of interest" may be categorized. There were 35 "points of interest". These were selected features whose sites were indicated on the map, and the additional information contained detailed descriptions of them. Many other "points of interest" appeared as annotations on the map e.g., Alberta Mental Hospital, Pheasant Hatcheries. Other "points of interest" were symbolized. Included in these were ski areas, and fish hatcheries.

Since 1967 there has been a period of experimentation and gradual change in the tourist information content of the road map. Reduction of information characterized this period. In 1974 the points of information were transferred to the Vacation Planner, a map which replaced the additional information on the reverse of the road map, and maps in the Alberta Travel Guide. Similarly all symbolized points of interest were removed by 1974. Nearly all the annotated points of interest were removed in 1967. It is interesting to note that several still remain eg Power House (J-4). Also, in 1972 another annotation "TROPHY LAKES" appeared. This would seem contrary to the trend of information removal.

Miscellaneous Information

Of these items the indication of hospital location, time zones, and location and status of "points of entry" may be regarded as the most useful to the map user. The inclusion of "military areas" makes people aware of these dangerous areas which are not open to the public.

Reference Location

Various combinations existed in the early years of the road map (Table 3-4). The first small index of places which appeared on the map assumed their locations on the map were known. Only from 1940 was it possible to locate unknown places, by reference to an alpha numerical index. Over the years there has been a great increase in the number of names appearing in the index. In addition there has also been the inclusion of accurate population figures for many settlements.

PRESENTATION OF THE MAP INFORMATION CONTENT

Two tables have been compiled to show how the major elements of the road map have been portrayed. Table 3-5 is concerned with the colour of the symbols, whereas Table 3-6 presents some characteristics of the type employed.

Colour

The use of colour has exerted a great influence on the presentation of the information content. There has been variety in both the number and combinations of printing inks employed (Table 3-5). Initially only solid colours were used, and although a percentage tint screen was used for the 1946 map, this was not extensively used until after 1954. Vignetting made an appearance between 1955 and 1957. From 1955 to 1960 it was used to denote the boundaries of the National Parks. Gousha used this technique for the larger lakes. The use of a half tone dot screen similarly made a

Table 3-5. COLOUR OF INFORMATION CONTENT OF OFFICIAL ALBERTA ROAD MAP, 1924-1974

EDITION	1	2	3	4	5	6	7		8		9	10
YEAR	1924, 1930	1932, 1934	1938	1939	1940, 1941	1942	1946	1948-1954 Modifications	1955	1956-1960 Modifications	1961-1966	1967-1974
Number of Impressions	1	3	3	4	5	5	5		6	4 (1960)	4	4
PRINTING INKS Black Ink	All Detail	Rv S R	Rv S R Rd Rm IG	Rv S R Rd				S (1948) TI (1948)	S Rm PP TI	R (1960)	R Rd Rm	R Rd Rm
Dark Blue Ink					Rv S R TI PP	Rv S R TI	Rv S R TI		Rv Ow	C (1958) (1960)	Rv Ow C (1963)	Rv Ow C PP
Light Blue Ink		Ow TI	Ow PP	Ow TI NP PP IG	Ow NP	Ow NP	Ow					
Red Ink		R Rd TI PP	R Rm	R Rd Rm	R Rd Rm	R Rd Rm	R Rd Rm TI		R Rd Rm TI		S R Rd C(1962) TI IG	S R Rd TI IG
Yellow Ink				P NP	P NP	P NP		NP(1948)		P (1956) (1958) (1959) (1960) NP (1960)	S C NP	S R Rd C PP NP
Green Ink									P	P (1957)		
Grey Ink					P	P		NP	R			
White	P	P NP	P NP								P	P

Province	P	Road Distances	Rd	Parks National, Provincial	NP PP
Rivers, Open Water	Rv,Ow	Road Markers	Rm	Index Grid Lines	IG
Settlements	S	Campsites	C		
Roads	R	Tourist Information	TI		

Source Official Alberta Road Map, 1924-1974

Table 3-6. SOME TYPE CHARACTERISTICS OF OFFICIAL ALBERTA ROAD MAP, 1924-1974

EDITION	1	2	3	4	5	6	7		8	9	10
YEAR	1924, 1930	1932, 1934	1938	1939	1940, 1941	1942	1946	1948-1954 Modifications	1955-1960	1961-1966	1967-1974
Physical Features	Black H I U UPC Ss	None	None	None	None	None	None	Red (1950) P U UPC Ss	Red P U UPC Ss	Black P I U UPC Ulc Ss	Black P I U UPC Ulc Ss
Water Features	Black H I UPC Ulc Ss	Black H I UPC Ulc S Ss	Black H I UPC Ulc Ss	Black H I UPC Ulc Ss	Dark Blue P I UPC Ulc S	Dark Blue P U UPC Ulc S	Dark Blue P I UPC Ulc S		Blue P I UPC Ulc S	Black P UPC Ulc S	Black P I UPC Ulc S
Administrative Names	Black H I U UPC S Ss	Black H I U UPC S Ss	Black H I U UPC S Ss	Black H I U UPC S Ss	Dark Blue H P I U UPC S Ss	Dark Blue H P I U UPC S Ss	Dark Blue H P I U UPC S Ss	Red (1951) P U UPC Ss	Black Red P U UPC S Ss	Black Red P I U UPC Ss	Black Red P U UPC S Ss
Settlement Names	Black H U UPC Ulc Ss	Black H U UPC Ss	Black H U UPC Ulc Ss	Black H St U UPC Ulc Ss	Dark Blue P U UPC Ulc Ss	Dark Blue P U UPC Ulc Ss	Dark Blue P U UPC Ulc Ss		Black P U UPC Ulc Ss	Black P U Ulc Ss	Black P U Ulc Ss
Road Markers and Mileages Distances	Black H U Ss	Red H U S	Red Black H U Ss	Red Black H P U S Ss	Red P U Ss	Red P U S	Red P U S		Red Black P U Ss	Red Black P I U S	Red Black P U S
Tourist Information	None	None	None	None	None	None	None	Black (1953) Red (1954) P P U U Ulc UPC Ulc Ss Ss	Black Red P U UPC Ulc S Ss	Red in cameo P I U UPC Ulc S Ss	Red in cameo P 10 (1973) U UPC Ulc S Ss

Black	Colour of Type
H, P, St	Handlettered, Preset, Stencil
I, U	Italic, Upright
UPC, Ulc	Upper Case, Upper und Lower Case
S, Ss	Serif, Sans Serif

Source: Official Alberta Road Map 1924-1974 brief appearance on the map. From 1961 to 1969 it was used to portray an impression of the general relief.

Physiography

1. Relief. Other than on the Vacation Planner hill shading has only appeared on the map between 1961 and 1968. On the Gousha map the hill shading was green. This was transferred to the black plate on the 1967 map. Presenting relief in this manner was discontinued because of the problem associated with the legibility of the other information.

Spot heights and the areal placement of names partially compensate for the lack of hill shading. Before 1961, the few spot heights were in red. After this date, because of the great increase in number of elevations given, the presentation of this information was transferred to the black plate. Upright type was used for the elevations of the cities and italic type for the mountain elevations. Between 1961 and 1973, this difference corresponded to the type of variants used to indicate settlement names and physical features. Since 1973 all mountain names and elevations have been shown by upright type.

2. Drainage. On the 1924 and 1930 maps an interesting comparison may be made between the representation of the

lakes in the northern and southern parts of the province, the technique of "repeated shore form lines" being predominantly confined to the southern area of the province. With the introduction of colour this technique disappeared. However until 1955, two inks were always employed in the presentation of water features. One ink was used for the alignment of small creeks, rivers, and the definition of the limits of open water. The second colour was used for the areas of open water. Since 1955 open water has been symbolized by a screen of the solid colour.

Table 3-6 indicates that since 1940 italic serif type has been used for water features. This is the type that is currently universally associated with water features. The use of the upper case lettering is confined only to the larger lakes and more important rivers.

Settlement Information

Before 1961 all settlement symbolization was black, or dark blue when black was not used. With the growth of the province's population there was an increase in the classes of settlement symbolized. Variation within the symbol, squares for cities and circles for other classes, was produced by size and fill-ins, filled versus unfilled. Table 3-6 shows that both upper and upper and lower case lettering was used. In reality, as Plates 3-1, 3-2, 3-3, 3-4, 3-5, illustrate, upper case lettering dominated the map. Upper and lower case lettering was confined to the smallest class of settlement represented.

Both the number of settlement classes and type face associated with them, changed on the 1961 map. A comparison of all Gousha's maps in the U.S.A., reveals that these nine categories used were standard. However although the same nine classes have appeared in the legend of the road map since 1961, Alberta still has no settlement which falls into the second class, 50,000-100,000.

The introduction of the nine classes presented a problem of design. Since only a limited number of variations in size and infill may be employed before the point symbol begins to dominate the map. Gousha overcame this by the introduction of another colour, yellow, which provided a background colour for the first three symbols. These symbols could then be repeated, as is the case. Therefore the variations exploited were reduced to six. It is interesting to note that the colour of the symbols present in the Gousha legend (black) does not correspond to those appearing on the map (red and black). An explanation for this may be found in an examination of the road symbolization. All settlements along a road which has a black casing are black. Those settlements along roads without a black casing are red. Until 1972, the Department of Highways Mapping Branch continued to use red and black symbols on the map. The red symbols denoted settlements having hospitals. Since then the use of red has been discontinued, because it was considered that the symbol was difficult to distinguish due to the proximity and amount of red of the roads. Table 3-6 indicates that from 1961 there has been no upper case type used for settlement names.

Administrative Names

The type employed to indicate administrative names has undergone numerous changes since the introduction of the map. Prior to 1961, the type was confined almost entirely to the black or equivalent colour. Similarly the use of serif type predominated. It was used for the identification of the Provinces and National and Provincial Parks. Since 1961, most of the administrative names have been shown in red sans serif type.

Transportation Information

1. Roads. Owing to the numerous editions and length of time over which the map has been produced, it is not surprising that road information has received different treatments. On the first edition, where the roads were

represented by parallel lines, the classes were distinguished by the different patterns employed as infill. 1932 saw the introduction of colour and variation in line widths as aids to identification. Before 1955 however, colour remained the major method of road identification. Similarly, solid colour was used to present road information until 1960, when the lowest class was represented by a screened black. Gousha reverted back to the use of solid colours, a trend which was rejected by the Department of Highways Mapping Branch.

Until 1961 roads were always represented without a casing of a different colour, because of the difficulty of registration. Therefore since its introduction, the use of casings have been confined to the highest class of roads of which only a few exist. The current use of red for the casing and solid yellow overprinted with a black screen for the infill, reduces the "noise" which would occur with a lack of registration.

Today's road map thus employs a sophisticated use of colour, line width and infill to symbolize the different classes.

Other information important in road transportation must also be mentioned. "Highway markers" along the primary highways and secondary roads appear on the road map. The symbolization of these route markers on the map follows the designs appearing on the highway road signs. Thus there has been attempt for close correlation between reality and graphic presentation.

Actual mileage distances shown on the map, as mentioned previously can be of three kinds. The first to appear on the map, distances between centres of population, were portrayed in red. From 1955 these were accompanied by accumulated distances in black. In 1961 the use of these was reversed. Red was employed for accumulated mileages and black for short distances. Long written distances, which have only been of significance since 1961, have always been symbolized in red.

Although the significance of a river ferry has declined to the motorist, because of bridge construction, it has appeared on all the road maps. On the 1924 and 1930 maps it was represented by a bridge symbol. This was replaced on later editions by a small circle containing a cross. A further change occurred when this symbol was replaced by the letter "F". This in turn underwent various size and colour changes. Gousha indicated a ferry by either the letters "FY" or the word "Ferry". This has been standardized since 1970 by the adoption of "FERRY".

2. Railways. The symbolization employed for railways during their period of presentation indicates well how the importance of a feature may change. When first shown in black as a line with short ticks, they tended to dominate the map. On the 1939 map this situation was reversed, the railways being represented by a fine black line. The absence of railways since 1940 on the road map is contrary to the majority of other published maps.

3. Airports. A pictorial symbol has always been used to depict airports. Red has been the dominant colour used although a black symbol was also used by Gousha who distinguished two classes of airports. From 1972 black has been used for the symbol in an attempt to decrease the prominence of this information.

Tourist Information

Of all the information portrayed before 1961, the National and Provincial Parks, and Provincial Campsites are the most important. The presentation of the National Parks have received several different treatments, although the use of green has predominated.

Provincial Parks, because of their relatively small areas have been shown in numerous ways. When first shown they were represented by an open circle containing an open triangle. In 1946 this was changed to a pictorial symbol, a black tree. When the map offered information on "Provincial Parks offering camping facilities" the tree image was still employed. A cameo image in a light blue circle was used. The Provincial Parks without camping facilities still continued to be represented by the black tree symbol. The large size of these symbols presented a problem of accurate location. Small crosses and arrows were introduced in an attempt to overcome this problem.

Gousha's solution to the problem was more successful. A simplified symbol representing a tree was employed. This symbol was used only for campsites in the National or Provincial Parks, and was only infilled if there were camping facilities. All other provincial campsites on the 1961 map were shown by a red triangle. However, since 1962 the colour of these triangles has been green. The continued use of these symbols has met with only one other problem, the large number of campsites which must be presented. There is often the problem of positioning them. This has resulted: firstly, in a reduction of the size of symbol used and secondly, in certain locations the use of a symbol smaller in size than that appearing in the legend.

As Table 3-4 illustrated numerous features of interest to the tourist have appeared on the map. The symbols used to present these were predominantly pictorial. For example, although the summer resort was initially symbolized by a solid blue triangle for most of its duration it was shown by an umbrella and then a red sun. Historical sites in addition to being symbolized by a geometric symbol were also symbolized by a crown, and then a cairn.

Gousha's presentation of tourist-orientated information was very different. The 35 selected "points of interest" were numbered by a cameo image in a red circle. The introduction of the Vacation Planner changed this. The Vacation Planner contained pictorial representations of features selected by the individual tourist zones. The annotated points of interest, so characteristic of the Gousha map, were in red type. Each label was accompanied by a small red square for location. Red labels still appear on the current road map for the few items of tourist information which remain. The pictorial symbols, used for the other points of interest, portrayed on the Gousha and Highway map before 1974, were also in red.

Legend

The legend is part of the map which often receives very little attention. The first legends contained only information relating directly to the roads. From 1932, however the importance of tourist information began to be recognized. Until 1940 the legend always appeared in the lower left of the map and until 1939 was unboxed. In 1940 the legend was moved to the top of the map. This enabled the detailed presentation of roads in the included areas of British Columbia and the U.S.A.. Accompanying this movement was the introduction of very decorative cartoushes surrounding the legend. These were modified by Gousha, and removed when the Highway Department Mapping Branch took over production. With the introduction of the whole province on the map, the position of the legend again reverted to the bottom left-hand corner of the map.

It is interesting to note that there has always been information portrayed on the map that has not appeared in the legend. The problem posed is, "What information should be included"? It is commonly agreed that on a road map features such as lakes, rivers etc. should be excluded, but this does not provide an answer to what should be included.

Reference Location System

Although an alpha numerical system has been used on the map since 1940 no associated grid lines appeared on the map until 1961. Gousha introduced an index of smaller areas, with a grid in red.

No changes, other than the addition of more geographic ticks (black) inside the neatline have been made by the Department of Highways Mapping Branch. This was possible because for the first time an accurate polyconic projection was introduced.

MAP USERS COMPLAINTS

Prior to the questionnaire survey of 1974, the only recorded sources of what users felt about the Alberta Official Road Map were the letters received by the Department of Highways. Many of the letters received, particularly those since 1967, were complimentary. They contained general comments on the users satisfaction with the road map and the preference for this publication over other material. Generally specific statements relevant to the information content of the road maps were confined to letters of complaint.

An examination reveals that in the 29 years since 1945, there have been 41 recorded complaints, and five requests for additional information. These included a suggestion that Calgary's Husky Tower should appear as one of the points of interest on the map, a photograph of the tower having appeared on the 1971 map.

Only three of the complaints came from non Albertans. Two of these were concerned with road classification, the other with an incorrect place-name spelling.

The 41 complaints have been categorized in Table 3-7. It is interesting to note that the inaccuracy of road information is the major complaint in the first group. Whereas the omission of settlement names forms the largest component in the second group.

SUMMARY

Chapter III examined the development of the Official Alberta Road Map from its first issue. This examination revealed that since 1924 the road map has shown many changes in format, map scale, method of folding, information content, and information presentation.

The number and nature of the road map user's opinions showed the inadequacy of depending on this method as the only approach to the study of the road map users, and their requirements.

Each of the three periods of production was characterized by different features. Before 1960 the

Table 3-7. USERS' COMPLAINTS FROM LETTERS RECEIVED, 1945-1974

Inaccuracy of Information	
Road Information	7
Mileage Information	3
Names	1
Population Information	1
Provincial Park Location	1
Settlement Information	1
Omission of Information	
Settlements	14
Road Information	4
Lake Information	2
Campsites	1
Tourist Information	1
Other	
Inclusion of the whole province	1
Incompatibility of information on map and in guide	3
Problem of presenting road junctions on the map	1
TOTAL	41

Source: Alberta Department of Highways Mapping Branch, 1975.

prominent feature associated with the road map was the numerous editions which appeared. This was the result of the cartographic technology available during this period. Other features included the large number of changes of format, map scale, and method of folding. These have been attributed to the great importance placed on the additional information presented on the reverse of the road map.

Gousha's road map, produced in 1961, was the true origin of the Official Alberta Road Map as it appears to-day. This map was characterized by the great amount of information presented. Information directly orientated to the tourist was given the greatest attention.

The feature associated with the production of the road map by the Department of Highways Mapping Branch, is the removal of information from the road map to other publications e.g., Alberta Vacation Planner. Since 1967, in an attempt to produce a better map, there has been continual experimentation and modification of the map content and symbolization. This is reflected in the 1974 road map, whose format, map scale, content, symbolization, and folding aim to provide the minimum amount of frustration to the map user.

FOOTNOTES

[1] Per. Com. with G. Audley, October 1975.

CHAPTER IV

THE QUESTIONNAIRE: DESIGN, DISTRIBUTION, AND METHOD OF ANALYSIS

In 1974, 754,200 Official Alberta Road Maps were produced. But it was unknown who used them, for what purpose(s) they were used, and how satisfactory they were. One of the aims of this study was to provide answers to these questions.

RESEARCH METHOD

Chapter II illustrated the research techniques available to study the map user, - tests, interviews, and questionnaires. Of all these methods the questionnaire was considered the most suitable for collecting the data needed. Several reasons can be given for this decision.

One of the greatest problems facing the writer was the large number of unknowns. Information regarding the bulk distribution of maps to chambers of commerce, motoring associations, and so on, was available from Travel Alberta. These agencies were, of course, not the users, but merely centres for further distribution. Similarly, although the number of Albertan households could be estimated from telephone directories, no calculations could be made regarding the number of visitors to Alberta. Because of these unknowns it was decided that the survey should cover as many people as possible, both Albertans and visitors. A mailed questionnaire for an identified population was therefore selected as the logical research method. This method also provided the most uniform and reliable results within the additional imposed limitations of finance, time, and geographical distances. During the execution of the survey, however, every opportunity was taken to interview present or potential users of the map.

THE QUESTIONNAIRE

Production

The production of the questionnaire took three months. One of the problems encountered was that no previous study along similar lines was available to act as a guide. Initially a rough questionnaire was circulated among staff and students of the Geography Department of the University of Alberta for general comments on ambiguity and content. A copy of this questionnaire was also given to members of Travel Alberta, the Department of Highways Mapping Branch, and other persons who had had experience in questionnaire production or map-user studies. The contents of the questionnaire were modified accordingly. Tests for colour blindness and questions relating to the map-viewing conditions were excluded as impractical. Several other questions were added at the request of Travel Alberta and the Department of Highways Mapping Branch. Among these were a request for information on preferences between the 1973 and 1974 road maps (Appendix E, question 11); use of the travel guide (Appendix E, question 28); the importance of mileage in the use of the map (Appendix E, question 22); and who read the map and how it was read (Appendix E, questions 26,27).

Pilot Surveys

Three pilot surveys were conducted. In the first survey the small set of questions which were to be sent out with copies of the 1974 road map were tested. Thirty-three questionnaires were distributed and completed at the Edmonton City Information Bureau on 23 and 24 May 1974. The majority of these were completed by Albertans. One problem which arose was in connection with the question related to the expected use of the road map (Appendix E, question 12). Many respondents were unable to mark only one answer as requested. However, it was decided not to change the question as its purpose was to see whether users could predict for what purpose they expected to use the 1974 map. Therefore, the only modification made to this questionnaire concerned the question relating to the level of education (Appendix E, question 15). To reduce the number of categories, all classes below grade 12 were combined. The questionnaire in its final, modified form is given here as Appendix F.

The second pilot test was concerned with all those questions relevant to visitors to the province. Between July 7 and 10 (1974), 42 questionnaires were handed out. This distribution was planned to coincide with the Calgary Stampede.

Several different methods of distribution were tried. On Sunday, the 7th., visitors were approached in the car park near Lake Louise. Ten questionnaires were distributed. Only two of these were completed on the spot, and the remainder of the people approached (8) were given stamped, addressed envelopes. Four of these questionnaires were later returned. The remaining questionnaires (32) were handed out at the gas stations in Calgary. Four gas stations were approached. The first would not allow distribution because the manager could not be contacted for permission. At the second station the distribution of questionnaires was permitted only when the customers were away from the gas pumps. The third station, which was visited in the early afternoon, had very few customers. None of these problems were encountered at the fourth station.

Almost one third of the pilot questionnaires returned (36) were completed at the gas stations. From an examination of the attitudes of the people approached during this pilot survey the writer concluded that the majority of people were more willing to consider completing the questionnaire if they had had to stop for a particular reason - i.e. gas. Therefore, it was decided that all succeeding questionnaires for visitors should be distributed from gas stations.

On the basis of the written responses to the pilot questionnaire and the writer's personal observations, numerous modifications were made regarding question wording and arrangement. The final questionnaire distributed to the visitors is Appendix G.

The third pilot test was concerned with the follow-up questions for Albertans who were known to have received a copy of the 1974 road map. Forty-eight questionnaires were distributed to a geography summer-school class on 16 July 1974. As a result, only a few minor modifications, mostly to reduce ambiguity, seemed necessary (Appendices H and I).

Design

Appendix E contains a comprehensive list of all the questions appearing on the various questionnaires. The questions distributed to Albertans and visitors were essentially the same (Appendix J). To reduce bias, all the questions were presented, whenever possible, in the same sequence. The question order was to some extent influenced by the questions relevant to those respondents who had not used the 1974 Official Alberta Road Map. To avoid wasting the respondents' time and patience, these questions appeared at the beginning of the questionnaire. Similarly, due to the large number of questions, each question was designed for a simple and quick response. Therefore, most of the questions were closed (Table 4-1), which in turn produced responses that could be easily coded for computer handling.

Content

As Table 4-2 indicates, every question given in Appendix E may be grouped into one of five categories. The first three categories provide general information on the respondent' demographic characteristics, motoring habits, and familiarity with maps. Questions in the fourth group cover general aspects of the use of the 1974 Official

Table 4-1 TYPES OF QUESTIONS

Type	Question Number (Appendix E)
Open	11(ii), 16, 19, 21, 33(iii), 36, 37, 38
Closed	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11(i), 12, 13, 14, 15, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33(i)(ii), 34, 35, 37, 39

Source: Research Data, 1974.

Table 4-2. CLASSIFICATION OF QUESTIONS ACCORDING TO INFORMATION CONTENT

Group	Content	Question Number (Appendix E)
1.	Demographic	13, 14, 15, 37, 38, 39
2.	General Motoring Information	1, 2, 3, 4, 16, 17
3.	Familiarity with Maps	5, 6, 7, 18, 19
4.	General Use of Alberta Road Map	8, 9, 10, 12, 20, 22, 23, 24, 25, 26, 27, 28
5.	Assessment of 1974 Alberta Road Map	11, 21, 29, 30, 31, 32, 33, 34, 35, 36

Source: Research Data, 1974.

Alberta Road Map. All questions relating to a detailed assessment of the actual information contained in the 1974 road map appear in the fifth group.

QUESTIONNAIRE DISTRIBUTION

The major problem related to the distribution of the final version of the questionnaire was that the questions relating to use of the 1974 road map could not be sent out with copies of the 1974 road map. There would probably have been a tendency to complete the questionnaire before the map was used, thus defeating some of the proposed aims of the survey. Therefore, to obtain accurate data two different methods of distribution were necessary, one for Albertans and the other for visitors.

1. Albertans (Sample Population A)

As the prime target of the survey was those people who actually used the 1974 road map, the bulk of questionnaires was distributed to Albertans who were known to have received a copy of the 1974 road map. One of the most important outlets of Official Alberta Road Maps is Travel Alberta, part of the Department of Tourism and Industry. Travel Alberta record the names and addresses of all people who contact them by telephone or letter to request road maps or tourist information. Between 7 June and 15 July 1974, 1,294 short questionnaires (Appendix F), were distributed by Travel Alberta with copies of the 1974 road map. The questions on this questionnaire were related primarily to the general demographic characteristics of the person contacted. Each questionnaire was accompanied by the writer's personally signed letter of introduction (Appendix K) and a franchised, addressed envelope.

Forty-four percent (551) of these questionnaires were returned. Every respondent whose questionnaire was received before September 5 received the follow-up questionnaire (Appendix H), which related in detail to the actual use of the 1974 map. As before, each questionnaire was accompanied by a personally addressed and signed letter of introduction (Appendix L) and a franchised, addressed envelope.

2. Albertans (Sample Population A1)

The previous population was in effect biased towards people who were known to have obtained a copy of the 1974 road map. To find out whether Albertans in general used the 1974 road map it was therefore necessary to approach a different sample population of Albertans. The questionnaire distributed for this purpose (Appendix I) excluded questions on the detailed use of the 1974 road map as these would be provided by population "A".

A stratified random sample, based on the areal distribution of Alberta's population, was selected for this generalized questionnaire. The number of households in Alberta was estimated from the latest telephone books available. On 4 September 1974, 250 questionnaires were mailed, with each area of Alberta receiving the percentage relevant to its proportion of the estimated households. Within each area the addresses were chosen using random number tables. Again a letter of introduction (Appendix M) together with a franchised, addressed envelope accompanied each questionnaire.

Initially the response was very poor. This was partially due to the large number of questionnaires which were returned unanswered, as many of the respondents had moved without leaving a forwarding address. Therefore, two weeks after the initial questionnaire was distributed a post card reminder was sent (Appendix N).

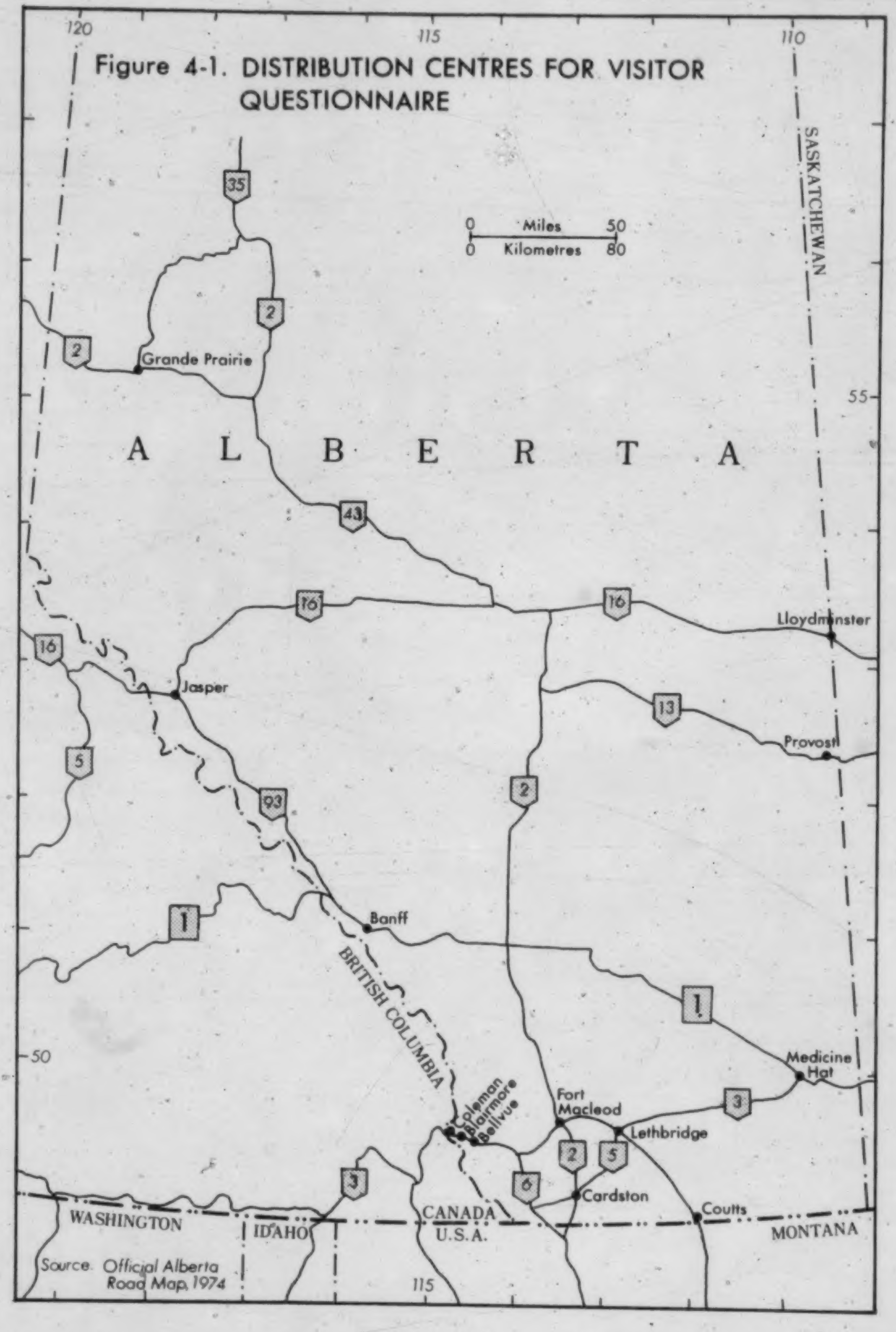
3. Visitors (Sample Population B)

Although many visitors request maps from Travel Alberta, it was felt that the same distribution method employed for Albertans could not be used. People requesting the maps might not visit the province, or a follow-up might be received long after the visit had been made. The responses might also be inaccurate if the visitors had disposed of the road map. This fear was in fact confirmed by the writer, who observed numerous people disposing of tourist material and road maps when they left the province.

It was felt that many visitors would be more likely to obtain copies of the 1974 road map upon entering the province. These map copies could be obtained from travel information centres, chambers of commerce, and so on. To have sampled visitors at these locations would have introduced bias, because the majority of people would have a 1974 map, but would not have had the opportunity to use it. These problems were overcome by approaching visitors (identified by car licence plates) at gas stations at centres on the major through routes. The criterion for each of the 13 centres selected (Figure 4-1) was that it was the most likely place where people would stop for gas before leaving the province.

Five major oil companies (Shell, Esso, Texaco, Pacific 66, and Gulf) were approached for permission to distribute questionnaires at their stations in the selected centres. Letters of recommendation from these oil companies were then sent to managers of the major stations in the various

Figure 4-1. DISTRIBUTION CENTRES FOR VISITOR QUESTIONNAIRE


120
115
110
SASKATCHEWAN
0 Miles 50
0 Kilometres 80
35
2
2
Grande Prairie
55
A L B E R T A
43
16
16
16
Lloydminster
Jasper
13
Provost
5
93
2
1
Banff
1
BRITISH COLUMBIA
50
Medicine Hat
3
Fort Macleod
Coleman
Blairmore
Bellvue
Lethbridge
2
5
3
6
Cardston
Coutts
WASHINGTON
IDAHO
CANADA
U.S.A.
MONTANA
115

Source. Official Alberta Road Map, 1974

centres. In all, eighty-five stations were selected, since it seemed better to visit a large number of stations each for a short duration only, so as to avoid causing any inconvenience.

The questionnaires (650) were distributed between 27 July and 26 August 1974. All questionnaires were distributed personally by the writer, to ensure a minimum amount of bias in the explanation of the purpose of the research. Centres on the east and west, and north and south boundaries of the province were samples on similar days of the week to reduce the bias in the respondent sample. For the same reason, there was also an attempt to ensure that gas stations selling the same brand of gas were not visited at the same time of day on successive days.

Initially it was proposed to distribute a fixed number of questionnaires at each station, partly to avoid inconvenience at any one station. But some stations were always busier than others, and the number of people buying gas fluctuated according to the time of day. The weather also exerted a significant influence on the number of people buying gas. For these reasons, there were unavoidable variations in the length of time a station was visited, and the number of questionnaires distributed at each station.

RESPONSE QUESTIONNAIRE

Prior to conducting the survey the writer was repeatedly warned that a very low questionnaire response rate was to be expected. It was for this reason that so many questionnaires were distributed to the sample populations of "A" and "E". In addition, a careful record was kept of the distribution and return dates of all the questionnaires. In fact, as Table 4-3 shows, the response rates were generally high. For this reason no attempt was made to determine the bias produced by non-respondents. However, information is available on the non-respondents of sample population "A" who answered the first short questionnaire, but failed to complete the follow-up questionnaire.

In addition to the high return rate, the majority of questionnaires were fully completed. There were, however, some discrepancies between the numbers returned and the numbers used in the analysis. Self explanatory reasons for this are given in Table 4-4.

An examination of the rates of response to all the mailed questionnaires showed several interesting features (Figure 4-2). Despite the different lengths of the various questionnaires, 50% of all those returned appeared, within 14 days. The tendency for visitors to reply more rapidly

Table 4-3. NUMBER OF QUESTIONNAIRES RETURNED

Population	Number Distributed		Number Returned		Number Analysed	
	No.	%	No.	%	No.	%
A (Part 1)	1294	100	574	44.3	573*	44.0
A (Follow-up)	547*	100	342	62.5	326	59.6
A1	250	100	117	46.8	93	37.0
B	650	100	391	60.0	390	60.0

Source: Questionnaire Survey, 1974.

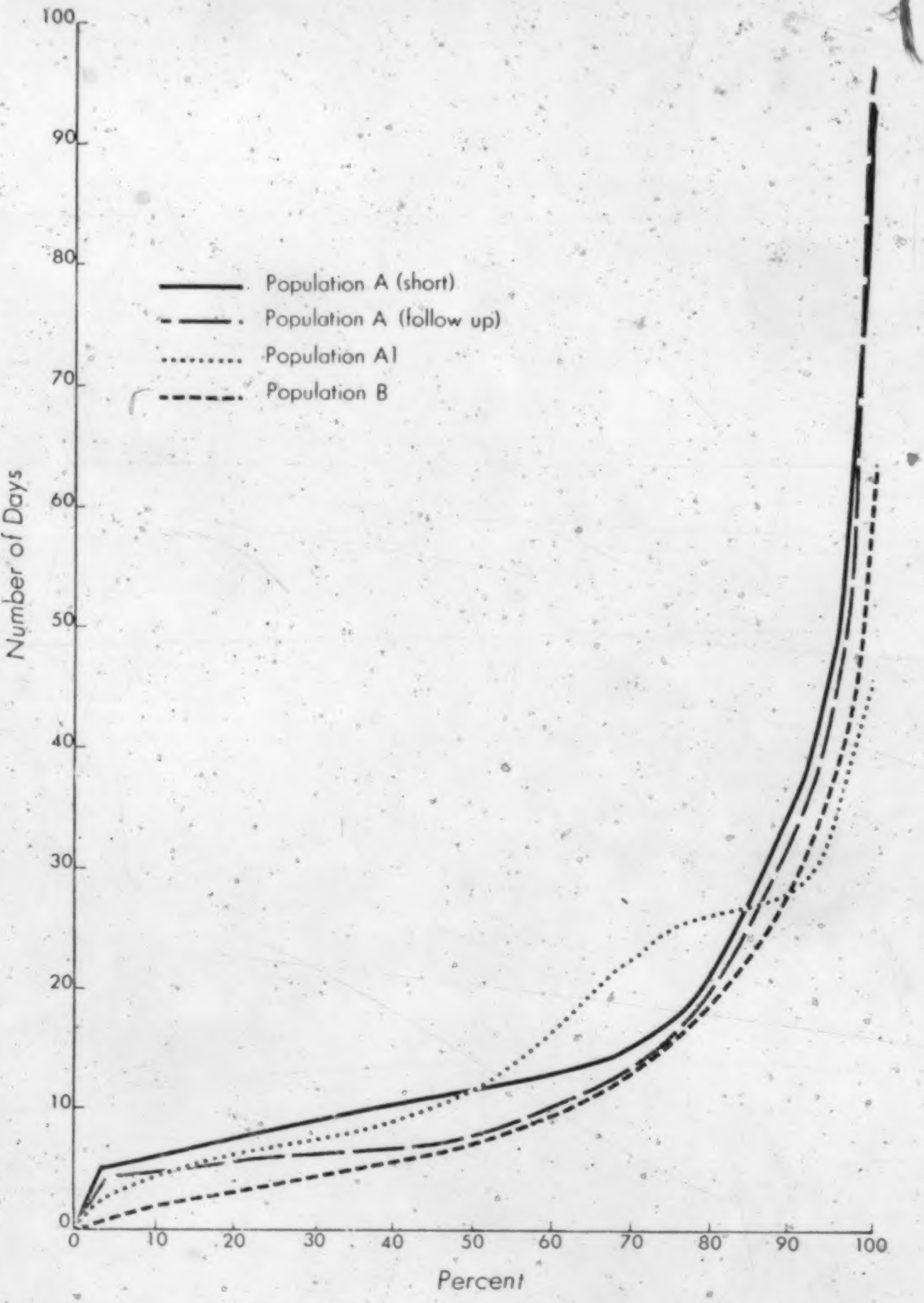
*The discrepancy between these numbers is explained in Table 4-4.

Table 4-4. REASONS FOR DISCREPANCIES BETWEEN NUMBER OF QUESTIONNAIRES RETURNED AND NUMBER ANALYSED

Reason	Population A		Population Al	Population B
	Part 1	Follow up		
Sent to relative out of province	1			
Arrived too late for follow up questionnaire	25			
Moved, no forwarding address available		8	18	
Identification removed		6		
Could not answer questionnaire		1		
Lost questionnaire		1		
Never received questionnaire			1	
Not interested			1	
Husband died			1	
Not driven in 25 years			1	
Old age pensioner			1	
Unknown			1	1
	26	16	24	1

Source: Questionnaire Survey, 1974.

Figure 4-2. QUESTIONNAIRE RESPONSE RATE



Source: Questionaire Survey 1974

than Albertans may in part be explained by the fact that the visitors' copies could be distributed and mailed back the same day. After the 14th day there was a fall-off in returns. This is fairly gradual for all the populations except "A1". The change in this curve after the 26th day can be attributed to replies received as a result of the follow-up postcard reminder. Ninety percent of all the responses were received within 28 days. Obtaining the remaining 10% of the responses varied with the respective sample from a further 18 days (sample population "A1") to 69 days (sample population "A", the respondents to the follow-up questionnaire).

QUESTIONNAIRE ANALYSIS

Table 4-5 illustrates that the majority of the questions provide data on a nominal scale of measurement. Thus the amount of statistical analysis which can be done is limited. For many questions frequency statistics and cross-tabulations (contingency tables) are the only methods possible. Nevertheless, the specificity and empirical nature of the data seem to compensate, and make direct conclusions and hypotheses possible.

Where the chi-square test was used the significance level of 0.05 was taken as the cut off criterion.

Table 4-5. QUESTIONNAIRE DATA MEASUREMENT

Type	Question Number (Appendix E)
Nominal	1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 15, 17, 18, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39
Ordinal	5
Interval	14
Ratio	6, 16, 19, 23, 38

Source: Research Data, 1974.

Significance levels lower than that brought a failure to reject the null hypothesis of independence between the two variables being related.

SUMMARY

The concern of this chapter has been with several aspects of the questionnaire used in the survey. Problems encountered in its production and design have been stated, with reasons for the policies adopted. There has been a brief introduction to the nature and content of the questions included in the survey. The various methods of distribution have been examined, and some mention has been made of the limitations of the data collected and the methods of analysis adopted.

CHAPTER V

ANALYSIS OF THE DATA FROM THE MAP USER SURVEY

From the results of the survey it is possible to distinguish different groups of respondents within the Albertan and visitor populations.

Three groups of respondents can be distinguished within the 573 respondents of Population A, Albertans who were known to have received a copy of the 1974 Official Alberta Road Map. These three groups are, the 289 who stated that they had used the 1974 map, the 37 who stated they did not use this map, and the 247 who did not reply to the follow-up questionnaire.

Within Population A1, Albertans who were questioned separately after selection at random from telephone books (total: 93 respondents), two groups can be discerned. The 27 respondents who stated that they had used the 1974 map make up one group, and the 66 respondents who stated they had not used this map constitute the other group.

Two similar groups can be distinguished within the respondents (390) of Population B, visitors to the province of Alberta. The first group (users) is composed of 106 people, and the second group (non-users) of 284.

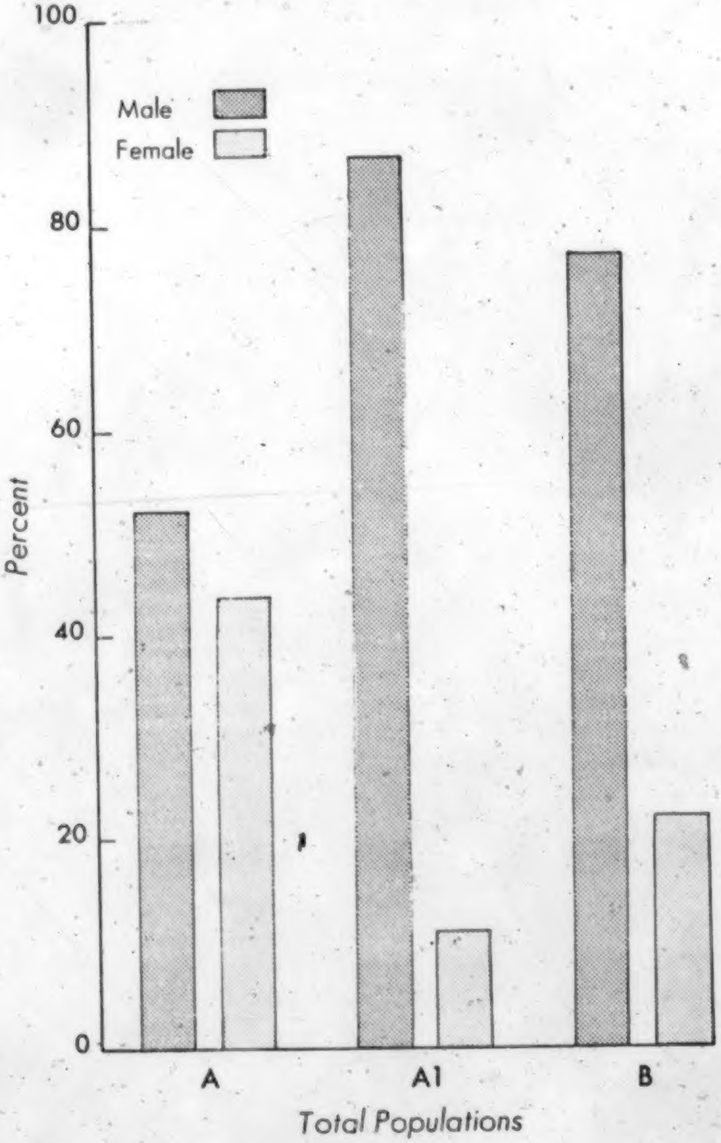
CHARACTERISTICS OF RESPONDENTS

This section considers the respondents' demographic background, motoring habits and familiarity with maps in general.

1. Sex. There are significant differences among the three populations (Figure 5-1). Whereas the respondents in A were nearly 50% male and 50% female, in both A1 and B the majority of the respondents were male. For B this can be attributed to the method of questionnaire distribution. Many of the visitors approached were couples or family groups, with the husband driving. Similarly, the sampling method used for population A1 accounts for the very high percentage of male respondents (87%). Since the man is generally regarded as the head of the household, the telephone is normally listed under his name. For each population the differences in sex between users and non-users of the 1974 map were insignificant as they reflected the same characteristics as the total population.

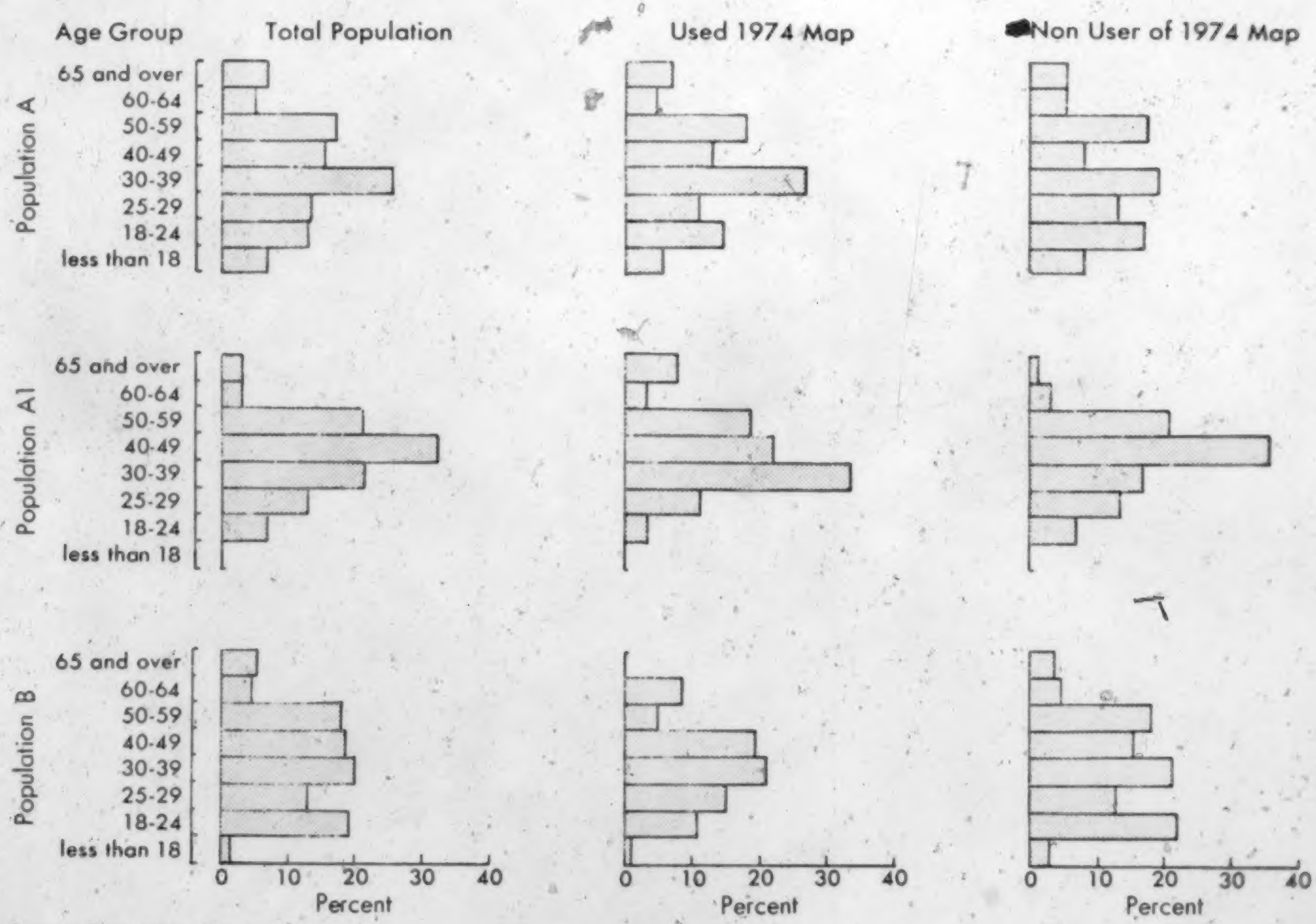
2. Age. Figure 5-2 presents the frequency figures for the major groups of respondents. There are similarities and differences within each population, and between the

Figure 5-1. SEX OF RESPONDENT



Source: Questionaire Survey, 1974

Figure 5-2. AGE OF RESPONDENT



Source: Questionaire Survey, 1974

populations. A comparison of the total populations of A, A1, and B reveals that with the exception of A1, respondents from all age groups are represented. The absence of a response, within the age group 0-18 years, in A1 can be attributed to the nature of the sampling used for this population.

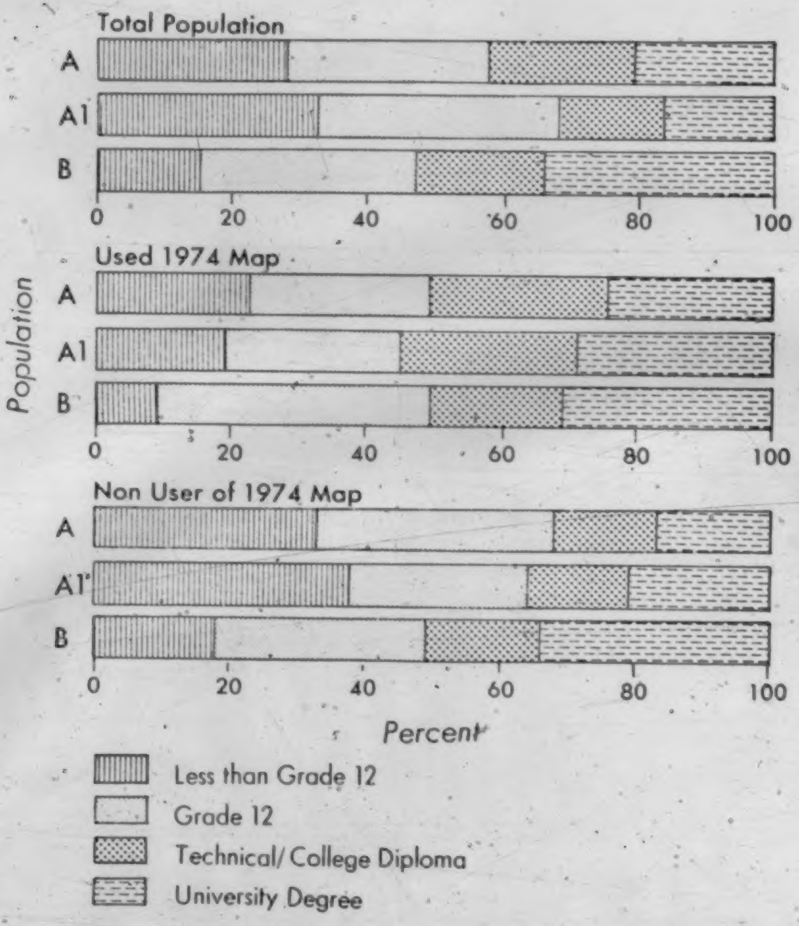
The significant age group in each of A, A1 and B is different. In A it is the 30-39 age group while in A1 it is the 40-49 age group. No predominant age group can be distinguished in B, as there are similar numbers of respondents in four age groups (18-24, 30-39, 40-49, 50-59). A distinctive feature of B is the large number of respondents (19%) aged between 18-24 years.

Some age distinction can be made between users and non-users of the 1974 road map. In population A the users tend to be over 30, as more non-users are found in the younger age groups. Within population A1 users predominate in the 30-39 age group. Non-users are associated with the 40-49 age group. In population B the majority of users are between 25 and 49 years of age and non-users are found in the age group 18-24 and among those aged between 39 and 64 years. When considering all users, it is interesting to note the relatively large number of respondents belonging to age groups over 60.

3. Education. The striking feature of all the populations, when considering the level of education achieved, is the large number of respondents who have completed grade 12 or less (Figure 5-3). More visitors than Albertans had completed some higher education (particularly a university degree). For populations A and B contingency tables revealed that age and the amount of education completed were statistically significant. In A the greatest amount of higher education was received by those in the 30-39 age group. The three age groups in B, 30-39, 40-49, and 50-59, were associated with the completion of the greatest amount of education. Statistically, sex and level of education were also significant for A. Although it appeares that similar percentages of both sexes had completed some higher education more women than men had finished their grade 12 education.

Nearly 50% of all users of the 1974 map had not completed any higher education. Non-users of this map, however, exhibited the general characteristics of their respective population. Therefore, although the use of the 1974 road map by Albertans may be influenced by the completion of some higher education, this does not seem to be the case for visitors.

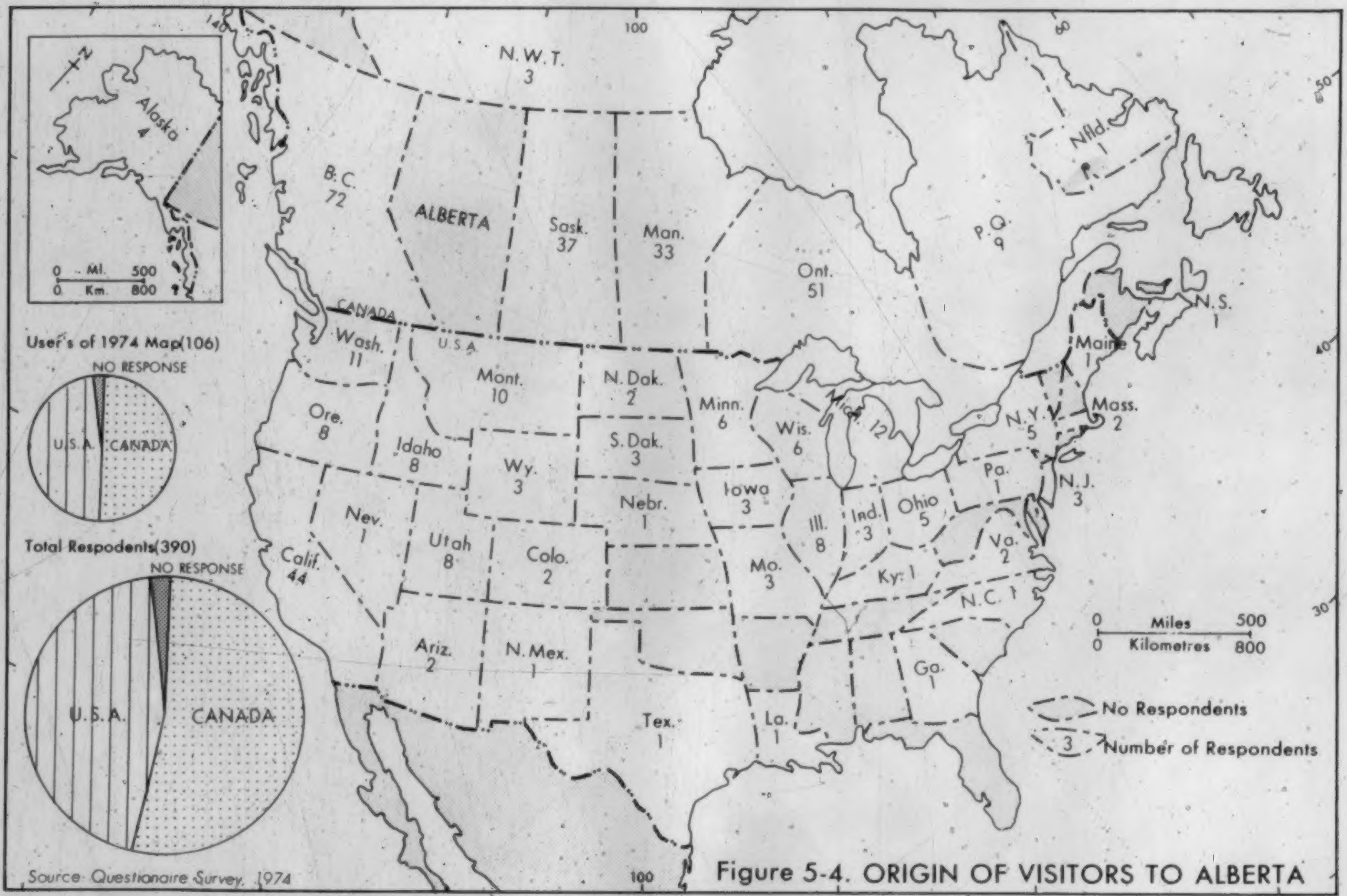
Figure 5-3. EDUCATION OF RESPONDENT



Source: Questionaire Survey, 1974

4. Origin of visitors and duration of stay. The origin of visitor respondents are shown in Figure 5-4. Nearly equal numbers of respondents came from Canada and the U.S.A. Within each of the countries, certain provinces and states can be singled out as major contributors. Many of the Canadian visitors were from the adjacent provinces of British Columbia and Saskatchewan. Ontario was the most frequent place of origin in eastern Canada. A similar trend is visible in the origins of visitors from the U.S.A. Montana, Idaho, Washington and Oregon each provided more than 2% of the visitors. Although there were respondents from all but 14 of the American states, the only other states providing responses of over 2% were Illinois, Michigan and California. No statistically significant relationship is evident between the origin of the visitor and his/her use of the 1974 road map.

Four distinct time periods can be used to describe the visitors' duration of stay in Alberta (Table 5-1). Although 84.4% of all visitors planned to stay for less than 15 day the majority (71.9%) remained for less than 8 days. Canadians form the majority of the few visitors who remained for more than 15 days. A comparison of users and non-users of the 1974 map reveals that users tended to remain for longer periods.


Alaska
4
0 Mi. 500
0 Km. 800
User's of 1974 Map(106)
NO RESPONSE
U.S.A.
CANADA
Total Respodents(390)
NO RESPONSE
U.S.A.
CANADA
N.W.T.
3
B.C.
72
ALBERTA
Sask.
37
Man.
33
Ont.
51
P.Q.
9
Nfld.
1
N.S.
1
CANADA
U.S.A.
Wash.
11
Ore.
8
Calif.
44
Idaho
8
Nev.
1
Mont.
10
Wy.
3
Utah
8
Colo.
2
Ariz.
2
N. Mex.
1
N. Dak.
2
S. Dak.
3
Nebr.
1
Tex.
1
Minn.
6
Iowa
3
Mo.
3
La.
1
Wis.
6
Mich. 12
Ill.
8
Ind.
3
Ohio
5
Ky. 1
Pa.
1
N.Y.
5
Va.
2
N.C. 1
Ga.
1
Maine
1
Mass.
2
N.J.
3
0 Miles 500
0 Kilometres 800
No Respondents
3 Number of Respondents
140
100
80
50
40
30

Source: Questionaire Survey, 1974

Figure 5-4. ORIGIN OF VISITORS TO ALBERTA

Table 5-1. DURATION OF VISITORS' STAY IN ALBERTA

Days	Total Population		Users of 1974 map		Non-Users of 1974 map	
	No.	%	No.	%	No.	%
1-3	156	39.7	29	27.3	127	44.7
4-7	122	31.2	43	40.6	79	27.8
8-14	53	13.5	18	17.0	35	12.3
15+	33	8.5	9	8.5	24	8.5
No Response	26	7.1	7	6.6	19	6.7
	390	100	106	100	284	100

Source: Questionnaire Survey, 1974.

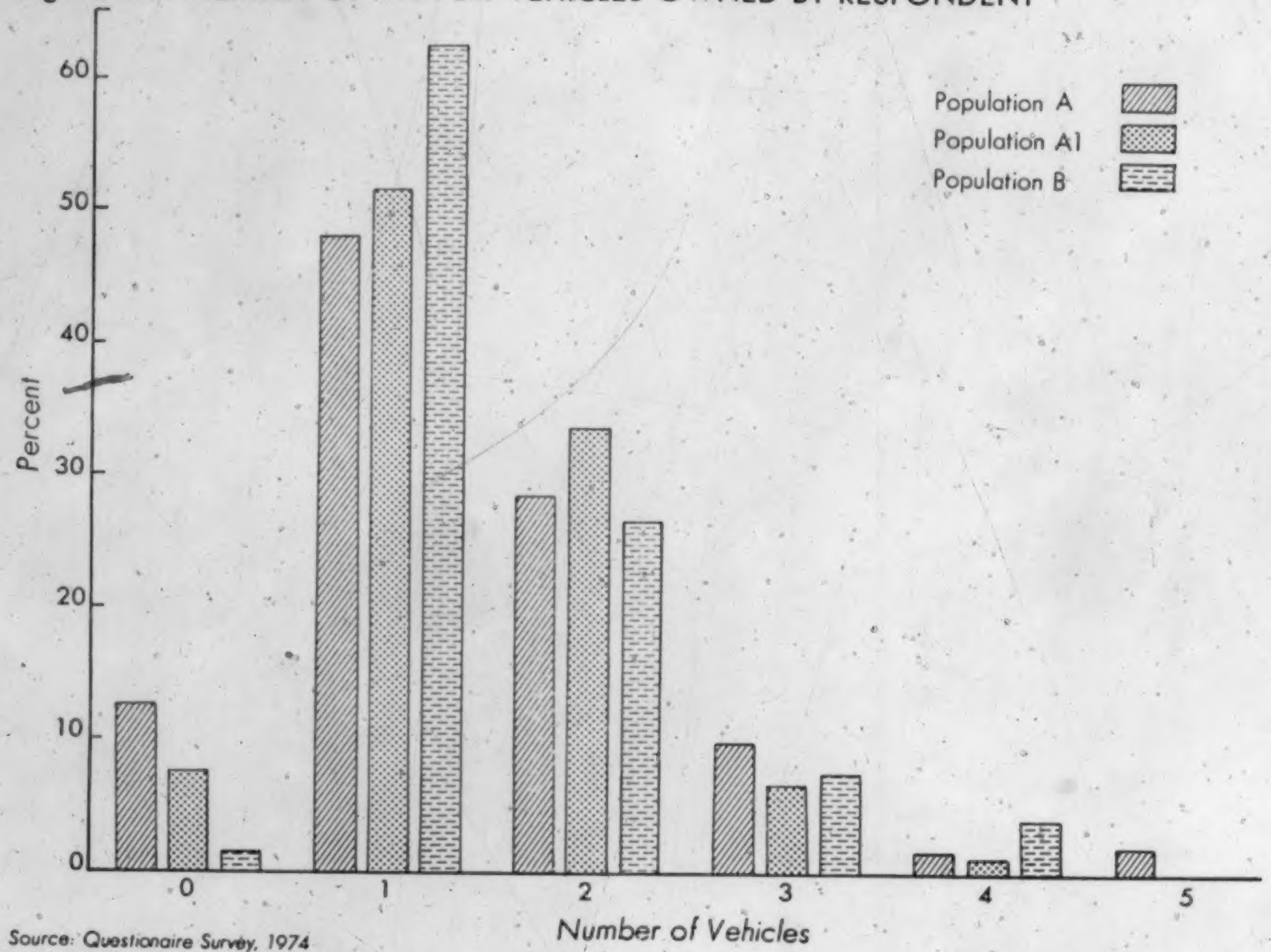
General Motoring Habits

1. Driving-licence and motor-vehicle ownership. The data collected indicated that over 90% of the Albertan respondents possessed a driving licence. It was assumed that population B had a similar percentage, since the questionnaire was handed specifically to the drivers of the motor vehicles.

The question on motor-vehicle ownership revealed that the majority of all respondents owned at least one motor vehicle. A car was the most frequent vehicle named. There were, however, differences among the three populations in the number of vehicles owned. Although a higher percentage of visitors owned cars, as Figure 5-5 illustrates a greater number of Albertan owners possessed more than one motor vehicle. These trends were evident among both users and non-users of the 1974 map. Because of the large percentage of car ownership in all groups, the question concerned with the renting of vehicles became insignificant.

2. Membership in a motoring association. Despite the large number of car owners in each population, a minority of respondents belonged to a motoring association (A, 37.0%;

Figure 5-5. NUMBER OF MOTOR VEHICLES OWNED BY RESPONDENT



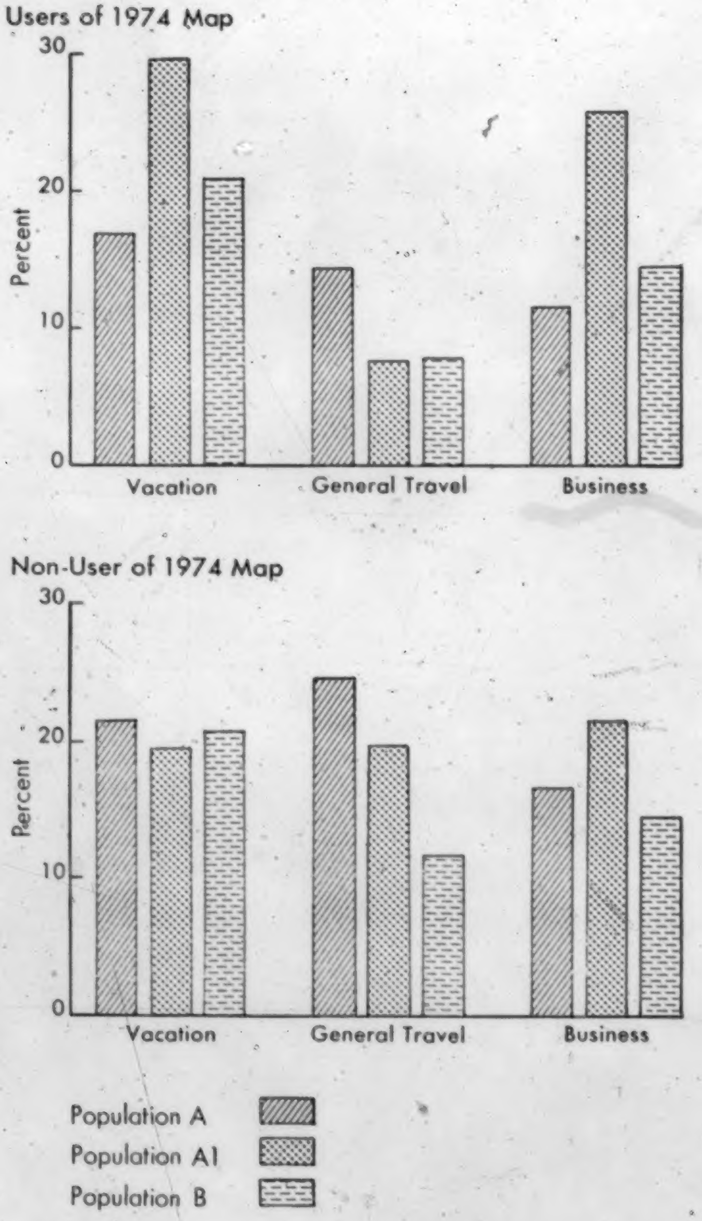
Source: Questionaire Survey, 1974

A1, 31.2%; B, 35.4%). For all populations there were no significant differences between users and non-users, with regard to membership in a motoring association.

3. Mileages driven. An analysis of the answers given regarding mileage driven outside of cities in a twelve-month period reveals that, whereas nearly 50% of Albertans drove less than 5,000 miles, only 30% of visitors could be similarly categorized. Visitors dominated the 5-15,000 mile class. All the remaining classes contained similar percentages of Albertans and visitors. The greatest mileage (130,000 miles) was recorded by a truck driver from Saskatchewan. Within all populations the mileage difference between users and non-users of the 1974 map seemed to be insignificant.

Figure 5-6 presents the explanations given by respondents for the mileages travelled outside cities. Despite the relative differences in the percentages between various populations there is a marked hierarchy as the most frequent single reason given is vacation which is followed by business and general travel respectively. However, as Figure 5-6 shows this hierarchy is more prominant for users of the 1974 road map than non-users.

Figure 5-6. REASON FOR MILEAGE TRAVELLED OUTSIDE CITIES DURING A 12 MONTH PERIOD*



*Excludes category "Vacation and General Travel" (Appendix E, Q.17)

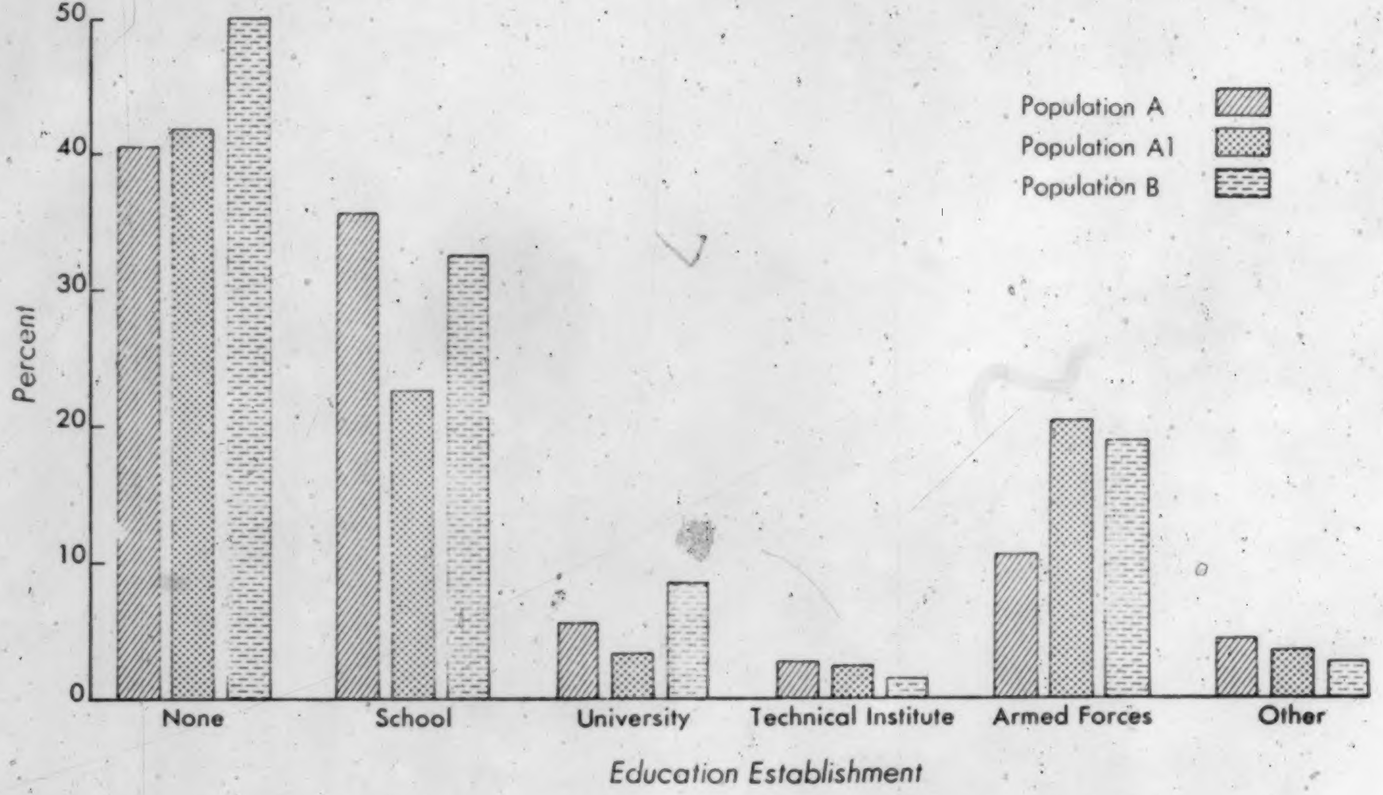
Source: Questionaire Survey, 1974

Familiarity with Maps

1. Map-reading education. In each of the populations more than 40% of the respondents had had no map-reading training (Figure 5-7). From the data collected it would appear that school was an important source of map education. However, for most of the Albertan population, who received their education within Alberta, the relevance of school to map-reading training is doubtful. Often the Alberta school curriculum incorporates little more than an awareness of the existence of maps. One striking feature evident in Figure 5-7 is the large contribution to map education made by the armed forces. Once again there are few differences between the characteristics of the total populations and those of the users and non-users of the 1974 map.

Age and sex were statistically significant for population A. More women stated they had obtained some map-reading training at school. This probably reflects the level of education they had completed. Similarly for population A it was found that, excluding those respondents under 18 years of age, 30% of each of the other age groups had received no map-reading training. A university training in map reading was found exclusively in the age groups 18-24 and 60-64. Similarly, training in the armed forces was

Figure 5-7. MAP READING EDUCATION OF RESPONDENT



Source: Questionaire Survey, 1974

primarily associated with people between the ages of 40-49 years.

2. Use of Maps. Two different approaches were employed in an attempt to find out how often respondents used maps in a one-month period. Population A was asked to choose one of four ordinal responses (Appendix E, question 5). For populations A1 and B, actual figures were requested because it was felt that this method would provide more meaningful results. Sixty percent of population A described their use of maps as often or very often. Comparing users and non-users generally, 65% of the respondents who had used the 1974 Alberta map also described their use of maps as often or very often. Only 28% of non-users fell into these groups. Unfortunately, the approach adopted for populations A1 and B gave a large number of responses which could not be used. Some of the results obtained were as expected, e.g., visitors had generally used maps more than Albertans. However, it also appeared that, in nearly all populations, non-users of the 1974 Alberta map had used maps in general more than users had.

The number of times respondents had used maps was cross-tabulated with the variables of sex, education completed, and map-reading training. Statistically, map-reading training appeared to be the only significant variable. For Albertans (Population A) who had used the 1974 Alberta road map the amount of map-reading training seemed definately associated with the number of times maps were used.

3. Travel aids used. Official Provincial/State maps and oil company maps were the most popular travel aids for all populations. Most of the other travel aids mentioned by the questionnaire proved insignificant (Table 5-2).

The number of different travel aids used by the populations varied. Visitors appear to have generally used both more, and a greater variety, of the travel aids listed than did Albertans. To populations A1 and B more oil company maps had been used than official provincial or state maps. Other aids favoured by visitors were road atlases and motoring-association material. Albertans preferred motoring-association material and topographic maps. The results confirmed what had been expected of people who used the 1974 road map. That is, they preferred to use official maps. There had, however, been no anticipation that their use of oil company maps would be comparable to the use of oil company maps by the non-users of the 1974 Official Alberta Road Map.

Table 5-2. PERCENTAGE OF RESPONDENTS WHO USED SELECTED TRAVEL AIDS IN A 12 MONTH PERIOD

Travel Aid	Population A		Population A1			Population B		
	Users* n=289 (100%)	Non-Users** n=37 (100%)	Total n=93 (100%)	Users n=27 (100%)	Non-Users n=66 (100%)	Total n=390 (100%)	Users n=106 (100%)	Non-Users n=284 (100%)
Federal	12.1	5.4	7.6	14.8	4.5	17.4	22.6	15.5
Official Province/State	100.0	45.9	47.3	100.0	28.8	58.2	100.0	43.7
Oil Company	43.9	29.7	61.9	48.1	66.7	65.1	60.4	66.9
Motor Association	18.7	16.2	16.1	22.2	13.6	30.3	33.0	29.2
Atlas	6.2	8.1	8.6	11.1	7.6	25.1	25.5	25.0
Topographic	12.8	3.0	16.1	25.9	12.1	8.7	11.3	7.7
Triptik	3.1	0.0	5.4	3.8	4.5	15.9	17.9	15.1

Source: Questionnaire Survey, 1974.

*Respondents who used 1974 Official Alberta Road Map
**Respondents who did not use 1974 Official Alberta Road Map

To most of the users of the 1974 Official Alberta Road Map, the information content of all the travel aids they had used was "satisfactory" (Table 5-3). The map generally considered the most successful was the triptik. This was followed, for most populations, by topographical maps. However, since few respondents stated that they used triptiks and topographic maps, the value of these maps as travel aids to the majority of the general public is minimal. When comparing oil company and official provincial/state road maps, it would appear that the latter were considered to be the more satisfactory type of map. Similarly, motor association material is favoured above the road atlas by most groups.

To discover exactly which specific travel aids respondents had used, they were asked to give examples. All respondents who had used federal maps gave only one example. The most frequently quoted map by these respondents was the Canada Highway Map. Many respondents gave more than one example of an official provincial/state map. The examples quoted by Albertans would appear to confirm the statement previously made (p.123) about Albertan motoring habits, since most of the map holding examples quoted were Canadian. The visitors' examples tended to reflect the diversity of their origins.

Table 5-3. RESPONDENTS' SATISFACTION (PERCENT) WITH INFORMATION CONTENT OF SELECTED TRAVEL AIDS

		TRAVEL AID																				
	Population	Federal			Official Province/State			Oil Company			Motor Association			Atlas			Topographic			Triptik		
		1[1]	2[2]	3[3]	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
A	Users[a] n=289(100%)	14.7	70.6	14.7	1.5	37.8	60.7	20.2	50.8	29.0	3.8	56.6	39.6	27.8	61.1	11.1	8.1	48.6	43.3	22.2	0.0	77.8
A	Non-Users[b] n=37(100%)	0.0	50.0	50.0	5.9	41.2	52.9	0.0	72.7	27.3	33.3	50.0	16.7	0.0	66.7	33.3	0.0	100	0.0	0.0	0.0	0.0
A1	Total n=93(100%)	20.0	80.0	0.0	7.1	57.2	35.7	10.9	65.5	23.6	7.7	53.9	38.4	42.8	28.6	28.6	14.2	64.3	21.5	20.0	20.0	60.0
A1	Users n=27(100%)	50.0	50.0	0.0	4.0	64.0	32.0	15.4	76.9	7.7	66.6	16.7	16.7	66.7	0.0	33.3	33.4	50.0	16.6	50.0	0.0	50.0
A1	Non-Users n=66(100%)	0.0	100	0.0	11.8	47.0	41.2	11.1	55.5	33.4	12.5	37.5	50.0	25.0	50.0	25.0	0.0	75.0	25.0	0.0	33.4	66.7
B	Total n=390(100%)	12.0	50.7	37.3	1.3	53.1	45.6	3.5	51.6	44.9	5.9	49.2	44.9	8.2	54.1	37.7	5.9	26.5	67.6	9.7	29.0	63.3
B1	Users n=106(100%)	12.5	50.0	37.5	0.9	49.1	49.0	6.2	62.5	31.3	11.4	62.9	25.7	22.2	48.1	29.7	8.2	16.3	75.1	5.2	36.9	57.9
B2	Non-Users n=284(100%)	11.6	51.2	37.2	1.7	56.1	42.2	2.6	47.9	49.5	3.6	43.4	53.0	2.8	56.3	40.9	4.5	31.8	63.7	11.5	25.8	62.7

Source: Questionnaire Survey, 1974.

[a] Respondents who used 1974 Official Alberta Road Map

[b] Respondents who did not use 1974 Official Alberta Road Map

[1] Map information considered unsatisfactory

[2] Map information considered satisfactory

[3] Map information considered most satisfactory

Respondents using oil company maps rarely used the maps of one particular company. One company, however, supplied an average of 15% of the maps used by all respondents. Three other companies each provided between 5-10% of the other examples given. Similarly, one particular road atlas accounted for 44% of the holdings quoted.

Although requested, the date of publication accompanied few of the examples given by the respondents. Therefore, only a broad generalization can be made from the data collected. It would appear that the travel aids cited were generally less than three years or more than seven years old. In the oldest category atlases accounted for the highest percentage.

An examination of the aids used while travelling in Alberta agrees with many of the findings previously mentioned. The Official Alberta Road Map and oil company maps were considered the most important travel aids. Of these, oil company maps were preferred by both populations A1 and B and were the maps most commonly used by the non-users of the 1974 road map. Motoring association material was the next most commonly quoted travel aid for all respondents. The use of the remaining aids varied according to the different groups of respondents.

Some interesting results arose in response to the question on how much respondents were prepared to pay for a map specially designed for tourism. More visitors than Albertans stated that they would never pay for such a map. In addition the figures given by those visitors prepared to pay were less than those quoted by Albertans. Five dollars was the maximum amount visitors were prepared to pay compared with several Albertans who said they would pay up to ten dollars. An amount between 25¢-$1.00 was the charge favoured by most respondents. These findings, however, should be interpreted with caution, as there is a distinct difference between asking what someone would be prepared to pay for such a map and then charging them that price. A good example of this situation is offered by the tourist map of the Banff-Jasper National Parks. Although the charge for this map was 50¢, the company responsible found difficulty in selling it. Of course, the method of distribution rather than the public's whims could have been at fault.

USE OF THE OFFICIAL ALBERTA ROAD MAP

Map Preference

Table 5-4 indicates that a high percentage of all respondents had used an Alberta road map. As was expected,

Table 5-4. PERCENTAGE OF RESPONDENTS WHO USED AN OFFICIAL ALBERTA ROAD MAP; 1973 AND 1974 MAP

	Population A n=573 (100%)		Population A1 n=390 (100%)		Population B n=93 (100%)	
	No.	%	No.	%	No.	%
Used an Alberta Road Map	476	81.1	185	47.4	51	54.8
Used both the 1973 and 1974 maps	364	63.5	17	4.4	25	27.0

Source: Questionnaire Survey, 1974.

Table 5-5. RESPONDENTS' PREFERENCES BETWEEN 1973 AND 1974 OFFICIAL ALBERTA ROAD MAPS

Map Preference	Population A		Population A1		Population B	
	No.	%	No.	%	No.	%
1973	58	15.9	3	12.0	4	23.6
1974	174	47.8	4	16.0	3	17.6
No Preference	126	34.6	16	64.0	9	53.0
No Response	6	1.7	2	8.0	1	5.6
	364	100	25	100	17	100

Source: Questionnaire Survey, 1974.

Albertans, particularly population A, were more familiar with the 1973 and 1974 maps than the visitors. When questioned about their preferences between the 1973 and 1974 map a large percentage of all respondents stated they had "no preference" (Table 5-5). Where a preference was stated, Albertans preferred the 1974 map and visitors the 1973 map. These preferences were illustrated by various reasons. Albertans favoured the improved design of the 1974 map - the removal of the tourist information to the Vacation Planner. The visitors tended to prefer the 1973 map because it included city insets.

Non-Use of 1974 Map.

Lack of knowledge of the existence of the Alberta map was the most frequent reason quoted by non-users of the map in populations A1 (61.9%) and B (29.8%), although it is somewhat surprising that so many Albertans should be unaware of the existence of the map. The second most frequent reason given by visitors was that they preferred other maps of the province. Oil company maps were preferred because of their easy availability. Several motorists stated they favoured road atlases because they intended to travel long distances quickly. Difficulty in obtaining the Alberta map was given by 21.5% of the visitors as the third most common reason.

After lack of knowledge of the map's existence, sufficient familiarity with the area in which they were travelling was the most frequently stated reason why Albertans did not use the 1974 map.

Use of 1974 Map

> "A map of any scale which could be used to choose or follow a route by road or path has been called a road map, even though this might not be its primary purpose" (Morrison, 1966, p. 17).

Although the types of purposes for which the map was used varied with the different populations, all groups of users stated that the most important use of the map was for road information (Table 5-6). The respective order of the other information was tourist information, general reference, and the calculation of mileages. This order was generally followed in the purposes ranked in second and third place by all the populations. However, from the results it would appear that general reference is more important to Albertans than to the visitor, who favoured tourist information after road information. Of course, it could be argued that this observation is insignificant, since there was no definition on the questionnaire as to what was meant by the term "tourist information" and

Table 5-6. IMPORTANCE OF PURPOSES FOR WHICH 1974 OFFICIAL ALBERTA ROAD MAP WAS USED

	RANK POSITION								
	First			Second			Third		
Purpose Population:	A %	A1 %	B %	A %	A1 %	B %	A %	A1 %	B %
Road Information	56.7	66.7	66.1	23.7	23.8	23.8	7.4	9.0	4.8
Tourist Information	18.7	14.8	18.9	25.2	14.3	38.9	24.4	36.4	23.2
General Reference	12.8	14.8	5.7	31.5	52.3	23.1	41.3	27.3	47.3
Calculation of mileages	6.9	3.7	4.7	13.3	4.8	14.8	20.1	27.3	18.3
Other	0.7	0.0	2.8	1.9	0.0	0.0	0.5	0.0	1.6
No Response	4.2	0.0	1.8	4.4	4.8	3.2	6.3	0.0	4.8
	100	100	100	100	100	100	100	100	100

Source: Questionnaire Survey, 1974.

"general reference". Thus the process of locating campsites might be considered by an Albertan as general reference because he knows of their existence. To a visitor, however, campsite information would probably be interpreted as tourist information.

Prediction of Map Use

Distributing two questionnaires to population A provided an opportunity to see how accurately people could predict the purpose for which they would use the 1974 map. The results showed that the largest percentage of respondents (38.9%) expected to use the map primarily for road information. These people stated later that they had in fact used the map for road information. The statistical significance of these results was confirmed by the fact that those respondents who stated they used the map for road information considered that "road classification" was the most important information on the map. However, due to the largest number of respondents who were familiar with the Alberta road map (Table 5-4), the apparent ability to accurately predict their expected use should be interpreted with caution.

General Information on Use of 1974 Map

Several questions asked for information relevant to the general use of the Official Alberta Road Map.

Figure 5-8 indicates that the map was predominantly used, while travelling from 1 to 5 times a day by both Albertans and visitors. As expected, because of the nature of the population, visitors tended to use the map more than Albertans.

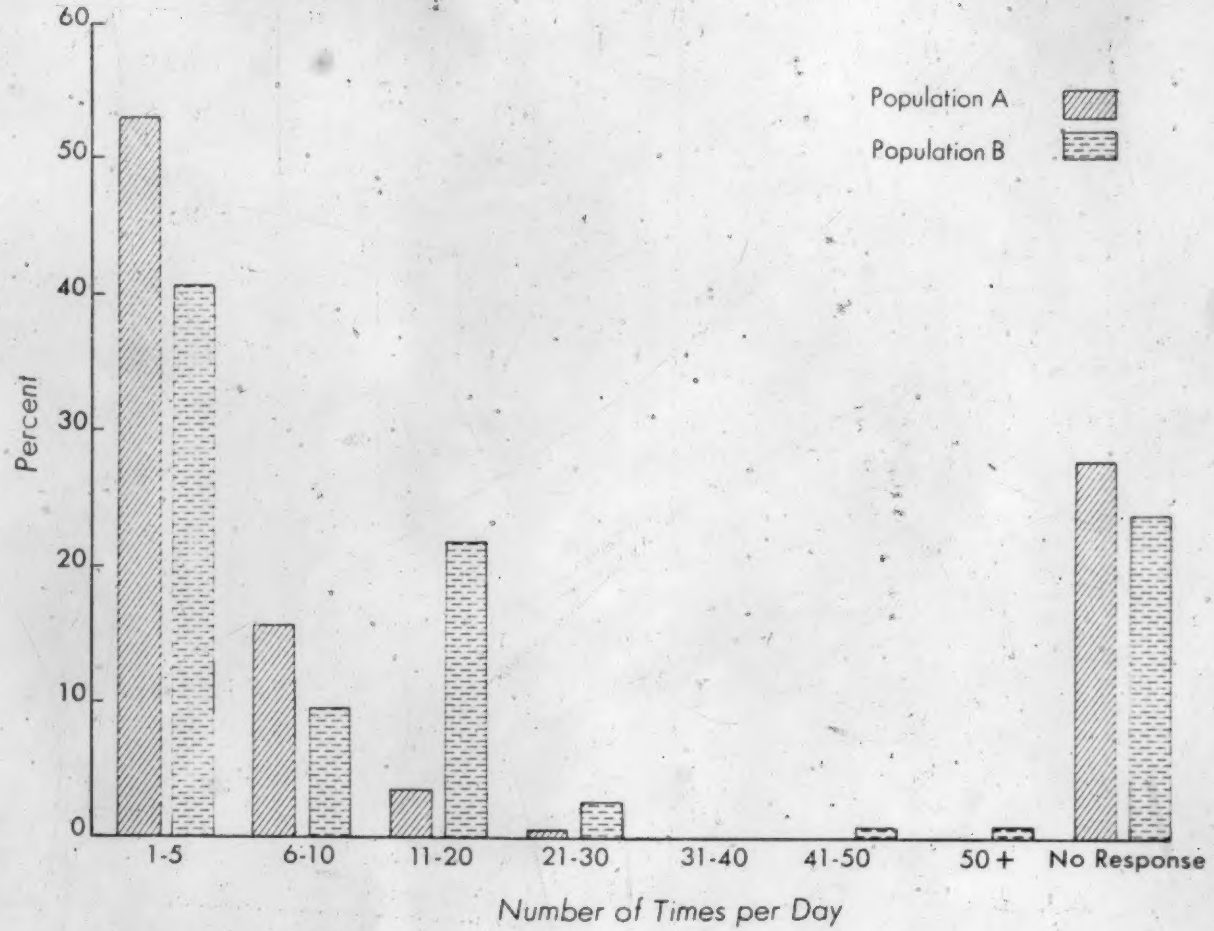
The 1974 map was used for route planning. For visitors "vacation" was the most important reason given. By Albertans "vacation and general travel" was stated as the prime reason, followed by "vacation".

For both Albertans and visitors it would seem that the map is read primarily by a passenger of the vehicle. When read by the driver, there was a greater tendency for the Albertan driver (77.0%) to stop before reading. Although a large percentage of visitors (48.7%) also stated that they stopped to read the map, many (28.2%) glanced at it while driving.

Use of Alberta Travel Guide

Each year Travel Alberta produces an Alberta Travel

Figure 5-8. DAILY USE OF 1974 OFFICIAL ALBERTA ROAD MAP



Source: Questionaire Survey, 1974

Guide. This booklet contains a detailed comprehensive list of information on many items of interest to a visitor. In addition to various points of general tourist information such as border information, approved accomodation is listed and campground facilities are tabulated. Numerous maps and descriptions of "tours" are also presented. This travel guide contained much of the additional information which respondents wanted shown on the road map. The results revealed that 69.2% of Albertans (Population A) and 45.3% of the visitors used this Travel Guide in conjunction with the 1974 road map.

ASSESSMENT OF THE 1974 ROAD MAP

General Assessment of the Map

Ninety percent of all the respondents who had used the 1974 road map were satisfied with the format, method of folding, quality of paper, and clarity of type and symbols. However 25% of both Albertans and visitors stated that they wanted a larger map scale. Nobody said they wanted a smaller scale map.

Assessment of Map Information Content

This problem was approached in two ways. In question 31

(Appendix E), respondents were asked to indicate what information contained in the 1974 road map was important to them. A second part to this question requested the respondents to rank the three most important items they had marked. The second approach adopted was question 30 (Appendix E). This question contained a list of carefully chosen features not presented on the 1974 road map. Respondents were asked to state whether they felt a need to include them on the road map.

Of the information contained in the map both Albertans and visitors considered "road classification" the most important (Table 5-6). In addition, as previously stated, the chi-squared test revealed that respondents who said that they had used the map primarily for road information listed road classification as the most important map information. These results confirm that the map is used primarily as a road map.

An analysis of the importance of the remaining 1974 road map information reveals differences between Albertans and visitors (Table 5-7). To Albertans, Federal and Provincial campsites were almost as important as road classification information. The significance of river names and lake names probably reflects the importance of fishing and water sports to Albertans.

Table 5-7. IMPORTANCE OF SELECTED INFORMATION SYMBOLIZED ON 1974 OFFICIAL ALBERTA ROAD MAP

Feature	IMPORTANCE (Percent) Population A n=289 (100%)	 Population B n=106 (100%)
Road Classification	93.4	92.5
Federal and Provincial Campsites	90.7	73.6
Lake Names	86.5	77.4
River Names	84.8	78.3
Provincial Parks Without Campsites	67.5	40.4
Population of Cities	61.2	73.6
Grid System of Location	60.9	43.4
Height of Mountains	51.9	71.7
Dams	50.9	48.1
Forest Trails in the National Parks	49.1	37.7
Height of Cities	38.4	55.7

Source: Questionnaire Survey, 1974.

To visitors, river and lake names were more useful than campsite information. City population and campsite information were of equal importance.

The ranking of the 3 most important items did not completely correspond with these previous results (Table 5-8). After road classification, campsite information and the population of cities were considered by all respondents to be more important than river and lake names. However, the importance of the population of cities shown in Table 5-7, because it gives an indication of the facilities offered (e.g., motels, hotel accomodation) was reflected in Table 5-8. An indication of mountain heights was also regarded as more valuable information by visitors than by Albertans.

Information presented on the 1974 road map which all respondent felt was unimportant included dams, elevations of cities, and forest trails in the national parks.

The items selected for inclusion in question 30 (Appendix E) were chosen for the following reasons. An indication of relative relief may influence the selection of a particular route. The writer wondered how important was an indication of 24-hour services such as gas, breakdown facilities, and restaurants. Railways and administrative boundaries were included in this question because they

Table 5-8. RANKING OF SELECTED INFORMATION SYMBOLIZED ON 1974 OFFICIAL ALBERTA ROAD MAP

	RANK POSITION					
	First		Second		Third	
Feature Population:	A %	B %	A %	B %	A %	B %
Road Classification	41.0	53.8	26.6	16.7	11.7	13.0
Federal and Provincial Campsite	39.6	32.2	23.8	26.6	9.4	5.0
Lake Names	2.1	0.9	3.9	3.9	14.9	7.0
River Names	2.1	1.9	7.0	3.9	9.4	7.0
Provincial Parks Without Campsites	3.5	0.9	10.7	13.7	8.3	13.0
Population of Cities	1.8	3.8	5.0	14.7	13.5	14.0
Grid System of Location	5.7	4.7	10.0	9.8	15.2	10.0
Height of Mountains	0.4	0.0	1.4	4.9	1.8	16.0
Dams	0.0	0.0	0.0	0.9	0.3	0.0
Forest Trails in the National Parks	1.2	0.9	7.1	2.0	7.2	4.0
Height of Cities	0.4	0.9	1.4	2.0	1.8	3.0
No Response	2.2	0.0	3.1	0.9	6.5	8.0
	100	100	100	100	100	100

Source: Questionnaire Survey, 1974.

appear on many other road maps. The importance of some indication of danger spots was included because it was one of the topics most frequently mentioned by people interviewed during the pilot surveys. The information most requested by people interviewed in the pilot surveys was some indication of stretches of roads having a high accident rate. Although the locations of "trailer waste-disposal sites" are listed in the Alberta Travel Guide, this was included in question 30, since their location was the question most frequently asked of gas attendants (Pilot Survey, Calgary).

Very similar responses to this question (30) were obtained from both Albertans and visitors (Table 5-9). Relief was considered to be unimportant, particularly by Albertans. Similarly, administrative boundaries, railways, 24-hour restaurants, and trailer waste-disposal sites were felt to be relatively insignificant. Twenty-four hour gas and breakdown services were considered to be important to very important, especially by visitors. The importance of information on danger spots, as indicated by the pilot survey, again revealed in the survey, since it was considered by both Albertans and visitors to be the most significant item in question 30.

Very few responses were given to the second part of

Table 5-9. IMPORTANCE OF INCLUDING ADDITIONAL SPECIFIED INFORMATION ON OFFICIAL ALBERTA ROAD MAP

Information	Population A n=289 (100%)					Population B n=106 (100%)				
	1*	2	3	No Response	Total Percent	1	2	3	No Response	Total Percent
Danger Spots	28.4	41.5	25.3	4.8	100	36.8	35.8	18.9	8.5	100
24 Hour Gas Stations	18.7	40.8	38.1	2.4	100	29.2	34.9	31.2	4.7	100
24 Hour Breakdown Services	19.0	41.2	36.3	3.5	100	31.1	39.7	24.5	4.7	100
Trailer Waste Disposal Sites	7.3	29.1	58.4	5.2	100	8.5	24.5	61.3	5.7	100
24 Hour Restaurants	5.9	34.6	55.3	4.2	100	12.3	35.8	46.2	5.7	100
Presentation of Relief	4.8	19.8	69.9	5.5	100	11.3	30.2	52.8	5.7	100
Railways	3.8	27.3	64.1	4.8	100	1.9	23.6	67.0	7.5	100

Source: Questionnaire Survey, 1974.

* 1 = Very Important
2 = Important
3 = Not Important

question 30 (Appendix E). These received are examined later in the chapter, along with the various other comments given by respondents.

Mileage Information

The relative importance of the four different methods used to shown mileage on the 1974 road map is expressed in Table 5-10. To both populations, "between dots" mileage was the most useful, although long-written distances were useful to visitors and short distances to Albertans. The mileage "between towns and junctions" was regarded as the second most important kind of mileage information, despite the fact that a large percentage of respondents, particularly visitors did not use it. Mileage presented in chart form and as written distances were ranked in third and fourth place.

Legend

More than 80% of all respondents stated that they had used the legend on the 1974 map. Of these respondents, the great majority were satisfied with both the legend's location and its information. An examination of the statements given for non-use of the legend reveals the major reason to be sufficient familiarity with the map's contents. The complaints about legend location were related to the

Table 5-10. IMPORTANCE OF MILEAGE INFORMATION CONTAINED ON 1974 OFFICIAL ALBERTA ROAD MAP

Mileage	Rank Position 1*	2	3	4	Used but not Ranked	Did Not Use	No Response	Total Percent
Between Dots								
Population A	48.4	24.9	8.7	2.4	4.2	10.4	1.0	100
Population B	44.4	23.6	7.5	4.7	5.7	11.3	2.8	100
Town and Junction								
Population A	20.4	33.8	15.6	8.0	4.2	17.0	1.0	100
Population B	11.3	28.3	18.9	10.4	3.8	24.5	2.8	100
Chart								
Population A	15.6	16.6	33.2	14.2	4.2	15.2	1.0	100
Population b	12.3	17.0	26.4	19.8	5.7	16.0	2.8	100
Written Distances								
Population A	9.7	10.7	19.0	37.1	3.1	19.4	1.0	100
Population B	21.8	13.2	19.8	19.8	6.6	16.0	2.8	100

Source: Questionnaire Survey, 1974.

*Most Important

fact that important routes in Washington and British Columbia were thereby omitted.

RESPONDENTS' COMMENTS ON THE 1974 ROAD MAP

Road Map

The writer was disappointed at the general apathy of respondents, in failing to take advantage of the opportunity offered to them to express their own opinions concerning the road map. More than 90% of all populations made no comments. This silence, however, might be interpreted as an indication of the users' general satisfaction with the map.

One general comment made by several respondents was that they had been forced to obtain more than one copy of the map, as it had failed to withstand extensive use. The other comments received in connection with the road map may be described briefly under the heading of "road" and "tourist" information. Those comments relating to the Vacation Planner and to city insets are studied separately.

1. Road. Road comments given by the respondents revolved around the amount of road information presented. Numerous people wanted minor roads included. There were also requests for presentation of scenic routes. Some respondents found

the terminology used to describe the roads misleading (e.g., What is an improved road?). Among the request for additional detailed road information were statements that major intersections should be numbered and roads under construction added.

Several comments were made with regard to the presentation of mileage information. The 1974 map was complimented for the ease of access to its mileage chart. Other respondents, however, complained that this chart was too small, and should include centres outisde the province. A few respondents also said they had noted discrepancies between mileages on the map and those actually driven.

2. Tourist. The most frequent "tourist" comment made referred to campsite information. Several respondents said private campsites should be shown on the map, together with some indication of the prices charged!. Respondents noted that they had found discrepancies between the information listed in the Travel Guide and that represented on the road map. Information on historic sites, hunting and fishing areas, and radio station frequencies were other features respondents mentioned for inclusion on the road map, although all of this information is contained in the Alberta Travel Guide.

Vacation Planner

An average of only 21.6% of Albertans and 17.9% of visitors stated they had used the Vacation Planner. Equal percentages of each population said they either liked or disliked it. Several respondents said they felt there was insufficient information on the Vacation Planner map, and that the location of the information included was "too vague". One respondent described the Vacation Planner as "Artful but lacks practical details". This reflected many users' opinions. Several other respondents offered constructive suggestions as to what information should be included (e.g., Calgary Zoo).

City Insets

Although the city insets were not included on the 1974 road map, more respondents (population A, 37.7%; population A1, 14.8%; population B, 24.5%), had used them than the Vacation Planner. These appeared on the reverse side of the 1973 maps but were printed in 1974 as a separate hand out, and also as part of the Travel Guide. The only comments concerning the design of the city insets were that their scale was too small, and therefore the amount of detail portrayed was insufficient. Many comments, particularly from visitors, included a statement that city insets should appear in a prominent place on the road map. Of the respondents who commented on city insets, 51.9% of Albertans and 79% of visitors felt that they should be included in the road map.

SUMMARY

This chapter is an attempt to provide answers to many of the questions posed in Chapter I. The data collected shows that a number of differences exist between the various populations and groups of respondents surveyed. Nevertheless, some broad generalizations were possible with regard to the respondents' demographic background, and familiarity with maps. From the data collected, it would appear that, with the exclusion of knowledge of the existence of the Official Alberta Road Map, populations A and A1 have many similarities.

Some of the general information collected enabled statements to be made about several aspects of the use and non-use of the 1974 road map.

It was established that road information was the most important part of the contents of the road map for the respondents who had used the 1974 map. Both Albertans and visitors were satisfied with most of the map's design aspects, since the only general comment offered was that the scale of the map was too small.

Concerning the assessment of the users' information requirements, the study revealed that some of the current map information was regarded as insignificant. The relative importance of other information was found to vary with the different groups of respondents. Both Albertans and visitors, however, generally agreed as to what additional information was desired.

The writer feels that the following statement summarizes the opinions of many Albertans about the 1974 Official Alberta Road Map, but it is unknown what visitors' reactions to this would be!

> "The title of the map is the Alberta Road Map and it should be kept as such. It should be a reliable guide to the roads and places of Alberta, not a superficial tourist convenience for fast driving vacationers rushing between main centres in search of bars and air conditioned motels (research data, 1974)."

CHAPTER VI

A COMPARATIVE STUDY OF SOME
ROAD MAPS AVAILABLE IN NORTH AMERICA

In this chapter a brief examination is made of 80 road maps (Appendix O) available to the North American public. All these maps were classified as either "official" (72.5%) or "commercial" (27.5%) maps. The term "official" was assigned to those maps recognized as the government sponsored publication for the respective country, province or state. Thus, unless otherwise stated, wherever the name of a province or state is given this refers to the official map. Included in the catagory "commercial" were maps produced for oil companies or motoring associations. With the exception of several commercial maps, all these publications were available free of charge to the public.

The map elements researched were format, map scale, folding technique, information content, and information presentation. Since these items were similar to those considered for the 1974 Official Alberta Road Map (Chapter III), comparisons between these maps and the 1974 map were possible.

FORMAT, MAP SCALE, AND FOLDING

Format

One prominant feature associated with the format of road maps is the great variety in dimension. In the long dimension of the selected maps, which ranged between 45.5 cm and 115 cm, 42 different lengths were encountered. However, 22 maps (61.3%) were between 75.1 cm and 95 cm, and all the commercial maps (38.7%) had a long dimension within the range of 55.1 cm - 95.0 cm. A similar variety existed in the short dimension, which ranged from 39.75 cm - 70.0 cm. Many of the oil company maps, however, had a standard short length of 45.5 cm. Since the format of the 1974 Alberta map is 50.5 cm by 101.0 cm, this map has a greater length than most of the selected maps.

Map Scale

As with format, there is a great variety in the scales of road maps. Among the maps examined the largest scale was 1:126,720 (Rhode Island); the smallest recorded was 1:3,673,040 (Exxon, Western U.S.A.). To facilitate statistical tests each of the 80 map scales was grouped into one of three classes: less than 1:500,000; 1:500,001-1:999,999; and 1:1,000,000 and over. It was significant that more than 50% of these maps fell into the third group (for example, 81% of the commercial maps were at this scale). It was considered that, excluding the differences in the local densities of settlement, the map scale would significantly influence the information content of each map. This hypothesis was borne out by examination of some items; e.g., tourist symbolized information. These receive discussion in the appropriate sections in this chapter.

On most of the maps, the road map occupied one side of the printed sheet and additional information such as general tourist information on the other. Some maps, however, split the road map, presenting part of the province on each side of the sheet. This was particularly characteristic of oil company maps although it was also exhibited by some official Canadian maps (Ontario, Manitoba, Quebec). Employing this technique enabled a larger map scale, and permitted the accommodation of extensive awkward areas, e.g., Northern Ontario. Generally the map format was successfully used by the scale of the map, the map at the chosen scale occuping most of at least one side of the map sheet. However, one noteable exception to this was Nebraska's official map which occupies less than half the area of one side of the map sheet.

Folding

Associated with map format is the problem of map folding. All the maps examined had between 4 and 13 folds. With 9 folds the 1974 Alberta map is characteristic of the majority of the 80 maps since 74% exhibited 6 to 10 folds.

The concertina method of folding was used by 84% of the maps to produce a final format suitable for car glove compartments and pockets. Generally, the remaining maps because of their smaller formats, had fewer folds. These were folded, like a booklet, with a succession of single folds.

Several conspicious features relevant to map folding were noted by the writer during the study. First, once unfolded many of the maps were difficult to refold. Good examples of these were the official map of British Columbia, and several oil company maps. Second, it was difficult to obtain easy or quick access to the legend or place-name index without completely unfolding the majority of maps. Because of the dimensions of some of the maps examined this would not be a simple task inside most cars. However, some official maps such as those of Ontario and Quebec, employed a folding method which permitted easy access to all parts of the map without the need to completely unfold it.

Unfortunately, for two reasons, this method cannot readily be applied to the Alberta map. First, since the current dimensions are not suitable the orientation of the province would have to be changed, or the map scale greatly reduced. Second, the machinery capable of folding maps in this particular manner is not available in Western Canada. Nevertheless, it should be noted that the concertina folding employed for the present Alberta Map does give easy access to both the place name-index and legend.

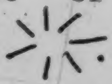
INFORMATION CONTENT AND PRESENTATION

Although the sequence of features discussed below is similar to those which have been considered for the Official Alberta Road Map, the approach is somewhat different. Here, the content and presentation of information are considered together, not separately as in Chapter III.

Physiography

1. Relief. Few of the maps examined showed hill shading. In part this might be attributed to the absence of significant relative relief in some of the provinces and states, or might have been a deliberate decision of design, since shaded relief has been shown to adversely affect the legibility of other map information (DeLucia, 1972). There was great variety in the degree of success achieved by the

hill shading which was present on the maps considered. On the Washington state map the unsuccessful use of black for the hill shading made much of the content difficult to read. Despite the use of a different colour, a similar statement can be made regarding British Columbia's map. However, Nevada's map can be cited as an example of the other extreme as it successfully presented hill shading without reducing the legibility of the other map information. Generally the map examination revealed that hill shading was most satisfactory where the scale was small (e.g, Alaska) or where little road information was presented [e.g., Hawaii (Texaco), and Wyoming].

On several maps the presence of relief was indicated by the use of a hachure symbol representing a single mountain . Where presented with other map detail there was often a problem of "background noise".

2. Elevations. Sixty-one percent of the maps showed spot elevations, which appeared more frequently on commercial maps than official maps. In part this may be attributed to the particular oil company maps chosen. Of the maps showing elevations (49), 91.8% gave mountain elevations and 26.5% city elevations. When all 80 maps were considered, 13.7% represented both city and mountain elevations; and a combination of spot elevations and hill shading was present

on 20% of the maps.

Unlike the 1974 Official Alberta Road Map, many of the maps examined failed to indicate, either on the map or in the legend, the unit of measurement used for the elevation.

The type face most commonly associated with the areal placement of physical names was italic sans serif type.

3. Drainage. While this information was presented in blue on all the maps examined, the degree of detail varied. In addition to the expected rivers and lakes, features such as canals [New York, (Getty)] were symbolized.

Italic serif type was the predominant (90%) type face associated with water features. The traditional use of blue for these elements was reflected by 73.7% of the maps, the balance (26.3%) using black.

Transport Information

Since most of the maps examined contained information on various modes of transport, they resemble the Alberta map.

1. Roads. Road classification is one of the most significant elements of road information on a road map.

Examining the number of categories symbolized on the maps revealed some interesting results. Four was the smallest number recorded (Northwest Territories) and 24 the largest (Tennessee). Some of these large numbers were attributable to the more numerous classes of roads (such as toll roads) in the U.S.A. Another reason was the presentation of proposed roads and roads under construction. These 2 classes appeared on 28% of the maps and were generally associated with maps symbolizing between 11-15 road categories. Table 6-1 groups the maps according to the number of categories they displayed.

Alberta's Official Road Map symbolizes 7 categories of roads. This would place it in the group 5.1-10 which characterizes nearly 50% of the maps examined. As previously stated (Chapter III), no proposed roads, or roads annotated "under construction" appear on the 1974 map.

Most of the maps analysed classified roads on the basis of their surface characteristics (e.g., paved or gravelled). For the major roads a further qualification was frequently assigned, such as "toll or "2-lane divided". However, some of the road descriptions which appeared in the legend were not self explanatory (for example "improved road", since the surface characteristics of a road with this classification in one province or state might not correspond with that of a

Table 6-1. NUMBER OF ROAD CATEGORIES SYMBOLIZED ON SELECTED ROAD MAPS

Number of Road Categories	Total Maps		Official Maps		Commercial Maps	
	No.	%	No.	%	No.	%
1 - 5	5	6.2	5	8.6	0	0.0
5.1 - 10	37	46.3	26	44.9	11	50.0
10.1 - 15	26	32.5	17	29.3	9	41.0
15.1 - 20	10	12.5	9	15.5	1	4.5
20.1 +	2	2.5	1	1.7	1	4.5
	80	100	58	100	22	100

Source: Research Data, 1975.

road with the same title in another province or state). Similarly, it could be argued that classification terms such as interstate, state, and local road, which belong to an essentially administrative classification system, are not of great value to the motorist. These terms do not precisely define the actual types of road conditions which the motorist can expect.

On the maps examined, the variables of colour, line width and design (length of line within casings) were utilized to distinguish the different road classes. A study of the colours chosen to represent the three most important road categories revealed the dominance of red in each class (Table 6-2). After red, green stood out as the significant colour in the first class; yellow and green were favoured in the second class; and black was the prominant colour in the third class of roads. It was also notable that many maps presented minor information in blue (e.g., Virginia). This greatly reduced the legibility of the road information since drainage features were also in blue.

With the large number of road categories shown on many of the maps, it was not surprising to observe that "casings" were extensively used to identify the most important roads. Ninety-one percent of the maps utilized casings which were generally black (89%), to contrast with the red used to

Table 6-2. COLOURS USED TO SHOW 3 MOST IMPORTANT ROAD CATEGORIES ON SELECTED MAPS

	Road Categories					
	First		Second		Third	
Colour	No.	%	No.	%	No.	%
Red	57	71.3	47	58.7	46	57.6
Green	17	21.3	12	15.0	7	8.7
Yellow	3	3.8	11	13.8	7	8.7
Black	1	1.2	5	6.3	16	20.0
Blue	1	1.2	3	3.7	2	2.5
Orange	1	1.2	2	2.5	2	2.5
	80	100	80	100	80	100

Source: Research Data, 1975.

present the major roads. In addition to these casings, several maps distinguished "scenic routes" by adding a wide band of a different colour, often green, to the designated stretch of road.

The 1974 Official Alberta Road Map identifies and labels two types of roads, primary highways and secondary roads. All the maps examined labeled roads, however the number shown varied. If interstate highways were excluded it was found that most (58.8%) maps only showed one label, although several maps included as many as three.

Mileage information is shown in four ways on the Alberta map, but only 2 of the 80 maps examined included these four methods. Short-distance mileage was the most frequently (83.8%) used method and this was generally (74.6%) presented in black. This was followed by accumulated mileage, which the user survey for this study indicated to be more important than short-distance mileage. This method appeared on 75% of the maps and red was the most frequent (87.5%) colour used for this information. Long-distance written mileage was a significant feature of small-scale oil company maps, and of official maps prepared by one commercial firm. This form of mileage appeared on only 10 of the maps. Again red was the dominant colour employed for its presentation. Only 7.5% of the maps studied included all these three forms of mileage. One map (Connecticut) presented none of these three.

The fourth method of presenting mileage on the 1974 Alberta map is a mileage chart. What could be described as a mileage chart or table appeared on 75% of the maps analysed. It was a typical feature of official maps rather than commercial maps. The most frequent type was a triangular mileage chart, perhaps because it is considered easier to use than a coded table. Coded tables, however, were included on a few maps (e.g., Utah). There was great variation in the number of places included in mileage charts. Pennsylvania had one of the largest charts listing, 78 places (compared with 28 places on the 1974 Alberta mileage chart). Many mileage charts included destinations outside of the province or state in question. On the Alberta map however, out-of-province destinations appear only in the long written mileage distances.

2. Ferries. Ferries, which are still important in some areas for route planning appeared on 43.7% of the maps studied. Where shown, a ferry was generally indicated by a black alphabetic symbol, - "F", "FY" or "Ferry".

3. Railways. Fifty-one percent of the maps analysed showed railways. Their presence was primarily associated

with official maps rather than commercial maps. Railways were found on all scales of maps, their alignments paralleling the major auto routes. This must create a distinct difficulty in accurately placing the roads. Generally the conventional black symbolization was employed. Noteable exceptions to this were red on the Official Yukon map and blue on the Official Saskatchewan map. Normally there was no distinction between the different types of railways, New Jersey's Official map being an exception since it distinguished "freight railroads" from "passenger railroads".

4. Airports. A majority (80%) of the road maps contained airport information. This was generally presented pictorially by a small red or black aeroplane symbol. The incorporation of air information on a road map can be justified where roads are relatively unimportant e.g., Yukon's Official map. On this map water aerodromes are distinguished from land aerodromes. The official map of the Northwest Territories distinguished centres offering regular charter flights. Three different types of airports appear on the Official Quebec map. The largest number of airport types shown on a map was four. This was on the Official Tennessee map, where "military", "public", "commercial", and "others" were distinguished. It could be argued that this degree of

airport information is justified if the map is being used by the pilot of an aircraft. However this should not be the case with a road map!

One map examined, North Dakota's, indicated the air routes of the major air carriers. Again, the justification for this is difficult to find.

Tourist Information

Only 3.7% of the maps analysed did not contain tourist information. Three ways of showing such information were used.

1. Annotations. This was the most common (81%) method of presenting specifically tourist-orientated information. Red appeared as the most dominant colour for these annotation, although other colours (such as black, green, orange, and blue) were also used.

Historical points of interest were one of the most frequently occurring annotations. Montana's official map, in addition to annotating major battlefields, indicated 13 famous historic trails. Another common annotation was "fish hatchery". The Official road map of Washington further distinguished trout from salmon hatcheries.

National Parks, National Forests, and Provincial or State Parks also appeared as annotations on many of the maps.

2. Symbolization. Although Alberta removed the symbolic presentation of specifically tourist-oriented information from the 1974 Official Alberta Road Map, this is still a popular feature employed on many road maps in general. Seventy-four percent of the maps examined (especially provincial maps) presented tourist information in this manner. Red was again the dominant colour used for the large variety of primarily pictorial symbols. A red skier symbol appeared on many of the maps. The location of universities and colleges was another frequent feature. Many other symbols were unique to particular maps. Among these are: the "potash mines" of Saskatchewan; the "hunting camps" of Labrador and Newfoundland; and the "public snowmobile access areas" of Vermont.

It is significant that the symbolization of tourist information was related to the kind and scale of a map. Symbolization prevailed on official or state maps with a scale of less than 1:1,000,000.

Campsites, which can be regarded as symbolized tourist information were found on 53.7% of the maps studied. But, unlike the Alberta map which uses a green triangle, red symbolization was often used (62.8%) on the maps examined. The design of the symbols varied from map to map. Many of the road maps of the U.S.A. excluded campsites entirely from the information presented in the road map. Instead, such information was frequently included in the additional information printed on the reverse side of the road map, and was often presented in the form of a comprehensive table which listed the facilities offered at each campsite.

3. Tabulations. This method of presentation was a feature of the Alberta map before 1974 (Appendix B). The presentation of tourist information in this manner was observed on both official and commercial maps but only a small percentage (12.5%) of the total. Where tabulation was used as with the presentation of other tourist information, red was the predominant colour.

Administrative Boundaries

Internal province or state boundaries appeared on 70% of the maps examined. To emphasize their location a band of solid yellow was often used. Although a feature of all maps and all scales, administrative boundaries were generally associated with official maps with scales of less than 1:1,000,000.

In addition to these boundaries, other boundaries were shown. One good example is "Indian Reservation", which appeared on numerous official maps.

Other Information

1. Settlement classes according to the size of population. Since some indication of the population size of settlements was generally desired by the map user surveyed for this study, it is noteworthy that many of the maps examined did not distinguish settlement by population (Table 6-3). Table 6-3 illustrates that the number of classes shown varied from 2 to 9. The 1974 Official Alberta Road Map, with 9 classes, would fall into the last group.

Although many maps did not classify settlements on the basis of their population, with the exception of Louisianna's official map, all settlement names were in an upright sans serif type. The Louisianna map employed upright serif type.

2. Grid. Most of the maps analysed had a place-names index. To locate these names on the map an alphanumeric grid was provided. Few of these grids were based on a geographic grid, but were instead arbitary. Many road maps did not give

Table 6-3. NUMBER OF SETTLEMENT CLASSES, ACCORDING TO SIZE OF THE POPULATION, DISTINGUISHED ON SELECTED MAPS

Number of Categories	Total Maps		Official Maps		Commercial Map	
	No.	%	No.	%	No.	%
0	22	27.6	12	20.8	10	45.5
2	1	1.2	1	1.7	0	0
3	1	1.2	1	1.7	0	0
4	6	7.5	6	10.3	0	0
5	12	15.0	10	17.3	2	9.1
6	11	13.8	9	15.5	2	9.1
7	9	11.2	6	10.3	3	13.6
8	14	17.5	10	17.2	4	18.2
9	4	5.0	3	5.2	1	4.5
	80	100	58	100	22	100

Source: Research Data, 1975.

an indication of orientation. The maps examined illustrated both extremes; i.e., from no grid system (Canada Highway Map) to four different grids on one map [Vermont included a general location grid (blue); the Universe Transverse Mercator (red); and a geographical grid (black)].

3. Additional Information. This information appeared on all but 2 of the maps examined. Four classes of information were distinguished. These were city insets, illustrative drawings, photographs, and tourist text (general hints on amenities and customs of the province or state). Table 6-4 lists the percentage of maps showing one or more of these features. There was a noticeable difference between the number of features presented on official and commercial maps, the commercial maps showing fewer features.

City insets, which varied greatly according to the number of insets per map and the amount of detail presented, were the most prominant additional feature on the maps studied (87.5%). This was followed by tourist text (72.5%) and photographic material (70%). Drawings were the least common feature of additional information, appearing on 44% of the maps analysed.

Prominant features included in the tourist text were a table of campsites listing their facilities (e.g., existence

Table 6-4. NUMBER OF ADDITIONAL ITEMS OF INFORMATION INCLUDED ON SELECTED MAPS

Number of Items	Total Maps		Official Maps		Commercial Maps	
	No.	%	No.	%	No.	%
0	2	2.5	1	1.7	1	4.5
1	9	11.2	1	1.7	8	36.4
2	18	22.5	12	20.7	6	27.3
3	21	26.2	15	25.9	6	27.3
4	30	37.6	29	50.0	1	4.5
	80	100	58	100	22	100

Source: Research Data, 1975.

of showers) and general tourist recommendations. Two other notable items often included were an explanation of the meaning of road signs, and insets of the interstate highways with the interchange numbers.

4. Date of the maps. One complaint often received by the writer, during the distribution of survey questionnaire to visitors to Alberta, was that many road maps were out of date. The study of the 80 official and commercial road maps, most of which were 1974 publications, revealed that only 50% contained a date prominently displayed either on the cover or the legend.

Colour

Most (91.3%) of the maps consisted of four impressions. Of the remaining maps, 7.5% involved five impressions and 1.2% involved 6 impressions. The four colours most commonly used were black, blue, yellow and red. Several oil company maps replaced black with a dark blue. Those maps employing more than four impressions usually showed hill shading, often using a green or brown ink.

For the background colour of the map area white was favoured by 81.3% of the maps and yellow by 7.5% On the remaining map the background colour was the same as that employed for the hill shading.

SUMMARY

Variety is the key word which emerges from this analysis of the 80 maps studied. When it is considered that these maps are advertized primarily as road maps it is surprising that very few common features can be found. The only common features are the classification and labelling of roads, the use of the colour yellow and the symbolization of drainage information in blue.

The examples cited in this chapter have revealed that the variety is not only in the map content but also in the techniques of presenting the information. A feature symbolized in one way on one map is often symbolized differently on another map. Campsites are a good example of this phenomenon. This practise must be very confusing to the map user travelling across a number of provinces and states.

Another striking feature which is evident from a visual study of the maps is that very few maps give an overall impression of clarity and careful design. The legibility of many maps was decreased due to the very prominent type and the use of heavy lines for roads. The extensive use of red, not only for road information but also for tourist information (symbols and annotations) made it difficult to decide which of these was the most important information. Travel Alberta's recognition that tourist information can be successfully presented elsewhere than a road map has aided the production of a well-designed, legible Alberta map.

CHAPTER VII

CONCLUSIONS

The purpose of this chapter is to draw together the results of the survey of the 1974 Official Alberta Road Map and the analysis of the 80 road maps. These findings are discussed on three different levels. First, the findings are applied to a specific map, the 1974 Official Alberta Road Map. Second, the results are discussed in the general context of road maps, and last, the significance of the findings are considered within the topic of map-user research.

1974 OFFICIAL ALBERTA ROAD MAP

While the analysis of the survey data provided some interesting background information on the respondent, the most important results are related to the purpose of the 1974 map use, and the assessment of its information content by the user. However, before considering these, mention of the major reason for not using the 1974 map should be made. From the data it can be concluded that the restricted use of the map by the public, particularly Albertans, is primarily attributable to an unawareness of the map's existence. Therefore, it is possible that Population A, because of its familiarity with the Alberta Road Map, did not include the most typical of Albertans.

One of the most important findings from the survey was that the 1974 map was used primarily for road information. In addition, most respondents were generally satisfied with the design of the symbols and type, and the format, folding and quality of the paper. However, a large percentage of respondents were not happy with the map scale - these preferred the inclusion of more tourist and road information. From this it could be inferred that the current map scale is too small.

The questionnaire analysis revealed that although road information was the most important map feature identified by all respondents, there were differences between groups in the priorities of other map items. To Albertans, campsite locations, and river and lake names were important, however to visitors, the size of centres was significant. An examination of motoring habits, map holdings, and vehicle ownership of Albertans revealed that much of their travel was probably within the province. This could account for their information requirements. By contrast visitors equated the size of centres with the number and quality of amenities available e.g., motels, restaurants. Other information, though, such as dams, forest trails and the elevations of cities were considered unimportant by most respondents.

An assessment of additional information desired on the 1974 road map revealed some interesting facts. First, although administrative boundaries and railways are found on many maps, this information was generally considered as unimportant. Second, identification of dangerous stretches of roads was the most frequent suggestion.

Other significant findings were the existence of a hierarchy in the mileage information, and frequent use of the legend.

Based on these findings the following recommendations for the improvement of the Official Alberta Road Map are proposed:

1. As most of the additional tourist information requested, such as radio stations frequencies and campsite amenities, are successfully presented in the Alberta Travel Guide, map users should be made aware of this source by a note in the map legend. The note should include a comprehensive list of the contents of the Alberta Travel Guide; an explanation that it is issued free of charge; and an address as to where it may be obtained. This legend modification would encroach on the amount of road information of adjacent

provinces. However, since the map is primarily concerned with Alberta this information can be obtained from other sources.

In conjunction with the annotation in the map legend, a conspicuous note could be placed in the Alberta Travel Guide informing the user of the availability of special purpose maps such as the canoe map, and suggesting the use of topographic maps for more detailed road information.

2. Most of the requests for additional road information can be classified into three categories; the inclusion of minor roads; the presentation of scenic roads; and an indication of roads under construction.

Minor road information is best understood within the framework of current government policy which tends to be somewhat confusing. In 1972 as part of the provincial paving programme primary highways and secondary road were designated, and only these were indicated on the map. Confusion arises when it is discovered that some roads are indicated as secondary even though upgrading has not yet been completed. As a result there are roads of similar quality adjacent to those classed as secondary which do not appear on the road map. Due to the policy of introducing secondary road identification it would not be possible to add minor roads at the existing map scale, and maintain the legibility of the map. Several solutions can be presented to solve this problem. A larger map scale could be used by representing half the province on one side of the map sheet, and the rest of the province on the other side. This approach, though, is not considered a suitable solution, since large areas of the province have no roads; relative reference would be difficult between places on different sides of the map sheet; and city insets could not be included on the road map. A second solution is to produce separate maps at a larger scale of those areas containing many minor roads e.g., Edmonton and Calgary areas, and include them in the Alberta Travel Guide. A third solution is to leave the road map as it is and suggest to the users, by notes in the legend and in the Alberta Travel Guide, the use of larger scale and more detailed topographic maps, available from the federal government. This appears to be the best solution since it is simple and quick to implement. If the map user really requires additional information he will pursue the references given.

Although information on scenic routes was asked for, it does not appear wise to include it on the Official Alberta Road Map. Scenic is a term which is subject to the individual interpretation. Furthermore, scenic routes can also be classified as tourist information which is available in the Alberta Travel Guide. For example, several "tours"⁴ are illustrated in the guide.

Even though there were the requests for the identification of roads under construction on the map, it is the policy of the Highway Department Mapping Branch to show such roads as completed if it is expected that construction will be finished by June 1 of that year. If it is expected that the road will be completed during that year, but after the June deadline the road would be shown but with the annotation "under construction." This approach is the logical solution to the problem, as the motorist is primarily concerned with what roads are available and not what might be there. Nevertheless, it is interesting that the note "under construction" has never appeared on the map produced by the Department of Highways Mapping Branch. For general reference it could be argued that the identification of current major road construction projects, to-gether with their year of completion would be useful information to the map user.

3. The policy of including city insets on the reverse side of the 1974 Official Alberta Road Map should be continued. As mentioned previously, in 1974 the Vacation Planner was included in place of city insets. From the questionnaire it was discovered that many users preferred city insets. Nevertheless, it is felt that there is a need for a separate map similar to the Vacation Planner. This map could also be produced as an addition to the Alberta Travel Guide. Care, though, would have to be exercised in the design of such a map since the use of pictorial symbols on the Vacation Planner was strongly criticized in the questionnaire survey. The exact locations of the features included were considered "vague" by many respondents, and the amount of information presented insufficient.

4. It is recommended that the information generally considered unimportant by the respondents e.g., city elevations, dams, and forest trails should remain on the map. Since hill shading is not on the road map, city elevations should be retained because they provide some indication of relative height and aid in the selection of prospective routes. The other information considered insignificant does not conflict with any of

the road information contained on the map. It is, However, suggested that the symbol for dams should be presented in the legend. Then, the word DAM and it's name could be removed from the map provided that the name was the same as the name of the lake. A similar treatment could be applied to ferries. The word FERRY could be replaced on the map by a black "F", and an explanation of the symbol provided in the legend. Both of these words take up more map area than many settlement names. It could be argued that placing these annotations directly on the map increases the content of the legend. If however, additional information in the legend results in a more legible map and at the same time does not reduce the essential map information then this solution should be considered.

5. Because of the importance placed by users on water features, it would be useful, space permitting, to include the names of major lakes and rivers, in the index of place names of Alberta.

6. Although many road maps contain hill shading, railways and administrative boundaries, the results of the questionnaire survey revealed that this information was not considered important. Therefore, it is recommended

that this information should continue to be ommitted from the current Official Alberta Road Map. The introduction of this information, particularly hill shading would provide too much information and thus reduce the legibility of the present map.

7. In Chapter V it was stated that identification of danger areas and centres where 24 hour service facilities are available were considered important by road map users. These features would not be difficult to incorporate into the present road map. Danger areas, for example could be symbolized with an explanation appearing in the legend. Since careful records of all road accidents are kept by the provincial government, danger areas can be identified and thus symbolized on the map. However, according to the Provincial Planning Branch (Transportation Department) no such areas exist within Alberta[1]. Here, government officials reason that when the number of road accidents increases significantly on certain sections of road, steps are taken to reduce the accident rate. For example, the speed limit may be reduced or warning signs erected. This approach would seem to be inadequate as many respondents thought dangerous areas should appear on the road map.

Similarly, an indication of centres offering 24 hour facilities could be presented by placing a red dot adjacent to the name of the centre in the index of place names. Reference to this information could also appear as a note in the legend. Despite the ease with which this information could be placed on the map obtaining reliable information is a major limitation. The permanency of 24 hour facilities are subject to change since their service is associated with their management. Furthermore, it could be argued that the size of settlements will indicate the presence of such facilities.

8. Although the policy of removing tourist oriented information from the Official Alberta Road Map and including it in other publications has been adopted by Travel Alberta and the Department of Highway Mapping Branch since 1967 (Chapter III), some of this type of information still remains on the map. For example, TROPHY LAKES are shown even though they are not accessible by road. Since the map is primarily a road map, some policy should be developed to identify what additional tourist information, if any, should be included.

9. An analysis of 80 maps revealed that "long written mileage distances" appeared infrequently on road maps. From the questionnaire survey, it was discovered that this method was considered, by most respondents, to be the least important way of presenting mileage information. Therefore, it is suggested that a more suitable approach is to include the information presented in this manner in the mileage chart. This would then provide a comprehensive list of mileages between major centres within the province and between important cities in the adjacent provinces.

10. Two sizes of symbols for Federal and Provincial campsites appear on the 1974 Official Alberta Road Map. The size used is dictated by the amount of space available on the map. To avoid the conclusion that the larger symbol represents a more important campsite, two alternative solutions are proposed. The small symbol could be used throughout the map, or both symbols could be employed. However, if the second approach is taken both symbols should appear in the legend with an explanation. This is in contrast to the current policy where the large symbol only is shown. Because of its simplicity and the fact that road information should be the most important map feature, the first solution is

recommended.

11. Several respondents noted that they had not found the 1974 map durable. Therefore it is recommended that some experimentation be carried out to find a more satisfactory paper.

GENERAL RECOMMENDATIONS FOR ROAD MAPS

Variety in the information content and presentation of this information was the most noticeable feature of the 80 maps examined. Many of these maps can best be described as general purpose maps, since extensive use of red made it difficult to distinguish which was the most important road or tourist information. If the major conclusions of the 1974 Official Alberta are accepted the following recommendations for road maps in general can be made:

1. A priority of map information must be established. Road information should dominate with tourist information subdued or removed from the map and placed in the additional information, or in a seperate booklet, like the Alberta Travel Guide.

2. Information currently shown on many road maps should be removed where possible. Included here are internal

administrative boundaries and railway lines. However, since the location of railway lines crossing roads is regarded as important for motorist orientation, it is suggested that features such as railway overpasses and crossings should be symbolized.[2]

3. In several of the road maps examined too many classes of roads were symbolized. By reducing the number presented the legibility of these maps would improve. This could be done by eliminating the presentation of all but the most important proposed roads or roads under construction.

   It is also suggested that a road classification system based on quality of the road such as divided, undivided, paved or gravelled would be more meaningful to the map user than administrative descriptions such as interstate highway, state highway and local road.

4. It must be recognized that a large number of respondents used the legend. Therefore, map producers should recognize the importance of the legend to the user, and reassess its value as a convenient way of abbreviating certain map information, thus reducing map clutter.

5. The fact that the same symbol can appear on several maps and represent different phenomena must be confusing to the map user. Therefore, it is suggested that the symbols presented on a road map should reflect those used on the road signs. With the current movement towards the use of international road signs, adopting this policy would automatically introduce some symbol standardization on road maps, such as a triangle for campsites.

MAP-USER RESEARCH

Since the response rates to the 1974 Official Alberta Road Map User Survey was good, the writer feels that this research has made a contribution to the knowledge of road map usage. Informaticn was provided where none existed. The results of the survey confirmed previous assumptions such as the existence of a mileage hierarchy, and in addition revealed new data. For example, the majority of people use the legend of a road map. Furthermore, an evaluation of the questionnaire survey results showed that the contents of the letters of complaint received by the Alberta Department of Highways did not completely reflect users' criticisms.

A common finding of all road map-user surveys using the deductive approach, is the request for more information. It is however, surprising to note that despite the differences in the scales of maps examined, the information generally requested is related to amenities such as 24 hour facilites. A comparison of the 1974 Official Alberta Map User Survey with other surveys supports the statement that railway are generally considered redundant information on a road map. Similarly that drainage information was an important map item. In the case of the Official Alberta Road Map, however, the significance of drainage information could be related to recreation rather than physical orientation.

The research conducted in this study has considered only one small aspect of a particular user, his information requirement, and is only a first step. Further investigation is required in the North American context to confirm the needs of road-map users. Once this is done and the needs known, it should be possible, within cartographic constraints, to produce specific experimental maps which meet the users' information requirements. This may be regarded as the second stage in the process of map communication. The third stage would then be possible, testing the users' map use ability. The fourth and final step is to apply the findings of such research to road maps for the general public.

FOOTNOTES

[1] Per. Com. with A.D. Chewenuk, Alberta Planning Branch Transportation Department, June 1975.

[2] Per. Com. with J.J. Klawe, Department of Geography, August 1975.

BIBLIOGRAPHY

Anderson, H.C. User Requirements for Modern Nautical Charts. *Surveying and Mapping*, 30 (2) (1970) 269-279.

Anderson, J.M. *Central Glasgow for the Motorist*. Unpublished research paper, University of Glasgow (1973) 32.

Arvetis, C. Commercial Map Design Concepts and Problems. *Nachrichten Karten-und Vermessungswesen*, 3 (1959) 14-16.

Astley, R.W. A Note on the Requirement of Road Map Users. *Cartographic Journal*, 6 (2) (1969) 130.

Balasubramanyan, V. Application of Information Theory to Maps. *International Yearbook of Cartography*, XI (1971) 177-181.

Balchin, W.C., Coleman, A. The Consultative Machinery of the Ordnance Survey. *Canadian Cartographer*, 3 (1) (1966) 48-51.

Baldock, D.E. Cartographic Relief Portrayal. *International Yearbook of Cartography*, XI (1971) 75-78.

Baldock, D.E. Multicoloured Road Map in Four Colours. *Canadian Cartographer*, 4 (1) (1967) 17-27.

Bartholomew, J.C., Kinninburgh, A.E. The Factor of Awareness. *Cartographic Journal*, 10 (1) (1973) 59-63.

Bartz, B. a. Experimental Use of the Search Task in an Analysis of Type Legibility in Cartography. *Cartographic Journal*, 7 (2) (1970) 103-112.

Bartz, B. b. Analysis of the Typographic Legibility Literature. *Cartographic Journal*, 7 (1) (1970) 10-16.

Beller, H.K. Problems in Visual Search. *International Yearbook of Cartography*, XII (1972) 137-144.

Board, C. Cartographic Communication and Standardization. *International Yearbook of Cartography*, XIII (1973) 229-236.

Boysen, C. The Evolution of a New Route Oriented Travel Map System. Exhibit presented at the 5 International Conference on Cartography, May 1970, Stresa.

Consumers' Association. Road Maps. *Motoring Which*, April (1971) 75-79.

Consumers' Association. Motoring Maps. *Which*, July (1963) 196-203.

Copland, D.R. Typographic Size Control for Cartographers. *Cartographic Journal*, 11 (2) (1974) 91-93.

Delucia, A. The Effects of Shaded Relief on Map Information Accessibility. *Cartographic Journal*, 9 (1) (1972) 14-39.

Dent, B.D. Visual Organization and Thematic Map Communication. *Annuals Association of American Geographers*, 62 (1) (1972) 79-93.

Drewitt, B. The Changing Profile of the Map User in Great Britain. *Cartographic Journal*, 10 1 (1973) 42-49.

Fullard, D. Problems of Communication between Editors and Users of Atlases. *International Yearbook of Cartography*, V (1965) 187-192.

Gardner, R.A. Cartography and the Mind of Man. Paper presented at the 6 International Conference on Cartography, August 1972, Montreal, Quebec.

Gausseu, H. La Couleur dans les Cartes Thematiques. *International Yearbook of Cartography*, IV (1964) 53-61.

Gerlach, A.G. Visual Impact of Thematic Maps as a Communication Medium. Paper presented at the 5 International Conference on Cartography, May 1970, Stresa.

General Drafting. Personal correspondence between Wayne Fish, and the writer, December 1973.

Grime, A.R. Teachers as Map Users. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Harrington, J.D. The Tourist Map of the United States needs a Great Designer. *American Congress on Surveying and Mapping*, 34 (1974) 553-559.

Harris, L.J. User Needs and their Effect on Design and

Programmes of Topographic Maps. *American Congress on Surveying and Mapping*, 28 (1968) 101-104.

Honyi, E. International Unification of Travel and Tourist Map Symbols. Paper presented at the 7 International Conference on Cartography, May 1970, Madrid.

International Cartographic Association. *Multilingual Dictionary of Technical Terms in Cartography*. Franz Steiner Verlag GMBH, Wiesbaden, 1973.

Igbozurike M.U. The Africa Road Map. *Cartographic Journal*, 11 (2) (1974) 99-101.

Imhof, E. Die Anordungder Namen in der Karte. *International Yearbook of Cartography*, XII (1962) 93-129.

Imhof, E. Reliefdarstellung in Karten Kleiner Mabstabe. *International Yearbook of Cartography*, I (1961) 50-52.

Jenks, G.F. Conceptual and Perceptual Errors in Thematic Mapping. *American Congress on Surveying and Mapping*, 30 (1970) 174-188.

Keates, J.S. a. A Recreational Map of the Central Cairngorms. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Keates, J.S. b. Symbols and Meaning in Topographic Maps. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Keates, J.S. Perception of Colour in Cartography. Paper presented to the Cartographic Symposium 1962, Edinburgh.

Kirby, R.P. A Survey of Map User Practices and Requirements. *Cartographic Journal*, 7 (1) (1970) 31-38.

Klawe, J.J. A Survey of Canadian Topographic Map Users. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Kolacny, A. Cartographic Information. *International Yearbook of Cartography*, XI (1971) 65-68.

Kolacny, A. Cartographic Information - A Fundamental Concept and Term in Modern Cartography. Cartographic Journal, 6 (1) (1969) 47-49.

Koeman, C. The Principle of Communication in Cartography. Paper presented at the 5 International Converence on Cartography, May 1970, Stresa.

Makowski, A. Asthetic and Utilitarian Aspects of Colour in Cartography. International Yearbook of Cartography, VII (1967) 62-87.

McGrath, G. Aero Charts and their Users. Cartographic Journal, 9 (1) (1971) 79.

McGrath, G. A Mapping of National Parks - A Methodological Approach. Paper presented at the Sympoisum on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

McGrath, G., Kirby, R.P. Survey Methods on the Use of Maps and Atlases. Canadian Cartographer, 6 (2) (1969) 132-148.

McGrath, G. The Users and Uses of the Official Maps of Jamaica and User Requirements. Department of Geography, Kingston University, Ontario 1968, 1-190.

McGrath, J.J Proposal and Work Plan for a Study of Mapping and Pre-Trip Planning. Anacapa Sciences, 1972, California.

McLune, S. Discussion on Papers presented at the Symposium on the Influence of Map User on Map Design, September, 1970 Kingston, Ontario. Cartographica, 2 (1971) 46-52.

Merriam, M. Eye Noise and Map Design. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Modley, R. Universal Symbols and Cartography. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Morrison, A. Testing the Effectiveness of Road Speed Maps and Conventional Road Maps. Cartographic Journal, 11 (2) (1974) 102-117.

Morrison, A. a. Methods of Evaluating Motoring Maps. Paper presented at 7 International Conference on Cartography, May 1970, Madrid.

Morrison, A. b. Experimental Maps of Road Travel Speed. *Cartographic Journal*, 7 (2) (1970) 115-132.

Morrison, A. Principles of Road Classification for Road Maps. *Cartographic Journal*, 3 (1) (1966) 17-30.

Ogilvie, B. Discussion on Papers presented at the Symposium on the Influence of the Map User on Map Design, September, 1970, Kingston, Ontario. *Cartographica*, 2 (1971) 46-52.

Rand McNally. Personal correspondence between Jon Leverenz, General Manager, and the writer, January 1974.

Ristow, W.W. A Half Century of Oil Company Road Maps. *Surveying and Mapping*, 24 (4) (1964) 617-637.

Robinson, A.H. Psychological Aspects of Colour in Cartography. *International Yearbook of Cartography*, VII (1967) 50-61.

Sandor, R., Dudar, T. Some Problems of Standardization of Transportation Symbols in Thematic Cartography. *International Yearbook of Cartography*, XI (1971) 160-164.

Sandor, R., Foldi, E. Map Lettering - An Important Element of Cartographic Communication. *Hungarian Cartographic Studies*, (1972), 47-49.

Saunders, B.G.R. Design Emphasis on Special Purpose Maps. *Cartography*, 2 (3) (1958) 108-113.

Sebert, I.M. Problems in Satisfying the Needs of the Canadian 1:50,000 Map User. Paper presented at the Symposium on the Influence of the Map user on Map Design, September 1970, Kingston, Ontario.

Sheppard, D., Adams, J.M. A Survey on Drivers' Opinions on Maps for Route Finding. *Cartographic Journal*, 9 (2) (1972) 105-114.

Sherman, J.C. Terrain Representation and Map Function. *International Yearbook of Cartography*, IV (1964) 20-24.

Southern, M.E. Map Use in Washington, District of Columbia. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

St. Arnaud, R. The Topographic Map and Map User. Paper presented at the Symposium on the Influence of The Map User on Map Design, September 1970, Kingston, Ontario.

Traversi, C. Maps of the Future, New Styles and Types Needed. _International Yearbook of Cartography_, X (1970) 124-128.

Walsh, E.M. Small Craft Charting on the Trent-Seven Waterway. Paper presented at the Symposium on the Influence of the Map User on Map Design, September 1970, Kingston, Ontario.

Warkentin, J. Random Thoughts on Manitoba Road Maps. _Canadian Cartographer_, 7 (2) (1970) 154-156.

Willis, J.C.T. The Ordnance Survey and the Public. _Geographic Journal_, 122 (1) (1956) 145-55.

Withycombe, J.C. Lettering on Maps. _Geographic Journal_, LXXIII (1929) 429-447.

Wood, M. Human Factors in Cartographic Communication. _Cartographic Journal_, 9 (2) (1972) 123-132.

Wood, M. Visual Perception and Map Design. _Cartographic Journal_, 3 (1) (1966) 54-64.

APPENDIX A

MINUTES FROM I.C.A. COMMISSION V 1972

MINUTES FROM I.C.A. COMMISSION V 1972

Terms of Reference

1. Long-term task: The development of the theory of cartography. The first step to be undertaken should deal with the theory of cartographic communication, i.e. the transmission of information by means of maps.

2. Short-term tasks for the period '72 to '76 arising from the long term task should include the following:
   1. The elaboration of basic principles of map language
   2. The evaluation of both the efficiency of communication by means of maps with reference to the differnet groups of map users.

APPENDIX B

1974 OFFICIAL ALBERTA ROAD MAP

For location see back pocket.

APPENDIX C

ROAD CATEGORIES PRESENTED ON THE OFFICIAL ALBERTA ROAD MAP, 1924-1974

ROAD CATEGORIES PRESENTED

ON THE OFFICIAL ALBERTA ROAD MAP, 1924-1974

1924/1930

Main Highway System

1. Surfaced with concrete
2. Surfaced with crushed rock, gravel or similar material
3. Sand Clay roads (normally good despite rains)
4. Heavy Clay or Loam Roads (good in dry weather, slippery after showers and heavy going after prolonged wet spells)
5. Sandy Roads (good during wet weather, heavy going after prolonged dry spells)
6. Projected Roads (not yet open for traffic)

The More Important Local Roads

7. Roads good under normal weather conditions
8. Roads good only under the most favourable weather conditions.

9. Principle Connecting Highway Outside the Province

1932/1934

1. Paved and Improved Gravel Road
2. Gravelled Road
3. Improved Earth Road
4. Earth Road
5. Local Road

1938

1. Bituminous Surface Road
2. Gravelled Surface Road
3. Standard Earth Grade Road
4. Dirt Road (unimproved)
5. District Road

1939

1. Surfaced Road
2. Gravelled Road
3. Graded Road
4. Unimproved Road
5. District Road

1940, 1941-1946

1. Paved Road
2. Gravelled Road

3. Graded Road
4. Unimproved Road
5. District Road

1948-1957
1. Paved Road
2. Gravelled Road
3. Graded Road
4. Unimproved Road
5. Gravelled District Road
6. Graded District Road
7. U.S. Interstate Road

1958-1960
1. Paved Road, 4 lane
2. Paved Road, 2 lane
3. Gravelled Road
4. Gravelled District Road
5. Graded District Road
6. U.S. Interstate Road

1961-1966
1. Divided Highway
2. 4 lanes Undivided
3. Paved Road
4. Improved Road
5. Graded Road
6. Dirt Road (unimproved)

} Each of these categorys has three levels of symbols.

1967-1974
1. Divided Highway
2. 4 Lanes Undivided
3. Paved Road
4. Improved Road
5. Unimproved Road.

} Within these categorys, primary highways and secondary roads are symbolized.

Source: Official Alberta Road Maps, 1924-1974

APPENDIX D

1973 OFFICIAL ALBERTA ROAD MAP

For location see back pocket.

APPENDIX E

QUESTIONS IN THE 9174 OFFICIAL ALBERTA MAP USE SURVEY

7

QUESTIONS IN THE 1974 OFFICIAL ALBERTA ROAD MAP USE SURVEY

1. Do you have a driver's licence? YES ☐ NO ☐

2. Do you own any of the following motor vehicles? Please circle all that are relevant.
CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, please specify ____________

3. Have you rented or borrowed any of the following motor vehicles during the last three months? Please circle all that are relevant.
NONE CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, specify ____________

4. Are you a member of a motor association, eg., Alberta Motor Association (AMA)?
YES ☐ NO ☐

5. How often do you use maps? (any kind)
VERY INFREQUENTLY ☐ OCCASIONALLY ☐ OFTEN ☐ VERY OFTEN ☐

6. In the past month how many times have you used maps? (any kind)
No. of times (please enumerate) ________

7. Have you had any training in map reading? Please mark the ONE most relevant.
None ☐
School ☐
University ☐
Technical Institute ☐
Armed Forces ☐
Other ☐ Please specify ____________

8. Have you ever used an Alberta Official Road Map? YES ☐ NO ☐

9. Have you used the 1973 Alberta Official Road Map? YES ☐ NO ☐

10. Have you used the 1974 Alberta Official Road Map? YES ☐ NO ☐

11. There is a marked difference in content between the 1973 and 1974 Alberta Official Road Maps. Which map do you prefer?
i) 1973 ☐ 1974 ☐ NO PREFERENCE ☐
ii) If you have a preference, please explain your reason for this preference ________
____

12. For what major purpose do you expect to use the 1974 Alberta Official Road Map? Please mark ONE answer only.
Tourist information primarily ☐
Road information primarily ☐
General reference (checking place names etc.) ☐
Calculation of mileages for mileage claims ☐
Other, please specify ☐

13. Sex. FEMALE ☐ MALE ☐

14. Please indicate your age by checking ONE of the following groups.
Under 18 ☐
18 - 24 ☐
25 - 29 ☐
30 - 39 ☐
40 - 49 ☐
50 - 59 ☐
60 - 64 ☐
65 and over ☐

15. Please indicate which of the following you have completed by checking the most relevant box.

Lower than grade 12 ☐
Grade 12 or equivalent ☐
Technical Institute or College diploma ☐
A University degree ☐

16. i) How many miles did you drive in the last twelve months? Approx. miles ________

ii) How many of these miles did you drive outside cities? Approx. miles ________

17. Which ONE of the following categories best describes your motor travel, outside cities, in the last twelve months?

Business ☐
Vacation primarily ☐
General travel primarily ☐
Vacation and general travel ☐
Other, please specify ________________ ☐

18. During your motor travel, in the past twelve months, which of the following travel aids did you use? Please indicate your satisfaction of the information they contained for your requirements by checking ONE of the boxes, such as 'most satisfactory', for each travel aid which you used. Where possible please give examples such as, the map name - ONTARIO, and the year, 1971.

i)

	Unsatis-factory	Satis-factory	Most Sat-isfactory	Map Name	Year
A) Federal (Government) Road Map	☐	☐	☐	________	____
B) Official Provincial/State Road Map	☐	☐	☐	________	____
C) Oil Company Road Maps	☐	☐	☐	________	____
D) Motor Association Road Maps	☐	☐	☐	________	____
E) Road Atlas	☐	☐	☐	________	____
F) Topographic Sheet	☐	☐	☐	________	____
G) Motor Association 'Triptik'	☐	☐	☐		
H) I did not travel last year	☐				

ii) Within Alberta, which of the following travel aids listed above, which you used, were the most useful? Please rank those that you used, listing them in decreasing order of importance, such as 1. - H) (most important).

1. ________ 2. ________ 3. ________

19. What is the most that you would pay for a map specially designed for tourism?

Would never pay Maximum would pay ________

20. Why have you not used an Official Alberta Road Map? Please check as many as apply.

You do not use road maps ☐
You prefered other maps ☐
You knew the area in which you were travelling ☐
You use road signs in preference to maps ☐
You ask people for information ☐
You did not know of the maps existence ☐
You had difficulty in obtaining the map ☐

21. From your use of an Alberta Official Road Map is there:

i) Any additional information that you would like to see included? ________________

____

ii) Any criticism that you would like to make? ________________

22. For what major purpose(s) did you use the 1974 Alberta Road Map? Please mark the relevant box(es) with an (X).

i) A) Tourist information primarily ☐
B) Road information primarily ☐
C) General reference (checking place names etc.) ☐
D) Calculation of mileages for mileage claims ☐
E) Other, please specify ______________________ ☐

ii) Please rank those that you have marked in decreasing order of their importance to you, such as 1. - A) (most important).

1. __________ 2. __________ 3. __________

23. About how many times did you refer to the 1974 Alberta Road Map during an average day of travel?

No. of times (please enumerate) _________

24. Did you use the 1974 Alberta Road Map for planning your routes?

YES ☐ NO ☐

25. When you planned your routes, which ONE of the following was the most important?

Vacation primarily ☐
General travel primarily ☐
Business ☐
Vacation and general travel ☐

26. During your travel in Alberta who generally read the Alberta Road Map?

YOU (DRIVER) ☐
YOUR PASSENGER ☐

27. In general, if the driver was reading the map did he(she):

Stop to read the map ☐
Glance at it quickly while driving ☐

28. Have you used the information in the 1974 Alberta Travel Guide? YES ☐ NO ☐

29. Do you find the 1974 Alberta Road Map satisfactory in the following respects?

Clarity of symbols	YES ☐	NO ☐
Size of map sheet	YES ☐	NO ☐
Folding of the map	YES ☐	NO ☐
Quality of the paper	YES ☐	NO ☐
Clarity of the type	YES ☐	NO ☐

*Scale Want more detail ☐ Present scale Okay ☐ Want less detail ☐

*Scale refers to the area covered by a map. A large scale map covers a small area but has great detail. A small scale map covers a wider area but has less detail.

30. The following information does not appear on the 1974 Alberta Road Map. How important to you is it that these be included?

i)

	NOT IMPORTANT	IMPORTANT	VERY IMPORTANT
Presentation of relief (elevation) as shown on the vacation planner	☐	☐	☐
24 hour gas stations	☐	☐	☐
Administrative boundaries	☐	☐	☐
Railways	☐	☐	☐
24 hour breakdown services	☐	☐	☐
Danger spots	☐	☐	☐
24 hour restaurants	☐	☐	☐
Trailer waste disposal sites	☐	☐	☐

ii) Are there any more things that would make the map more useful to you and which are not listed above?

____

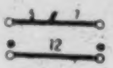
31. The following information is contained in the 1974 Alberta Road Map. If you find the information important to you please check with an (X).

i) A) River names ☐
B) Lake names ☐
C) Dams ☐
D) ft Height of cities ☐
E) △ Height of mountains ☐
F) ● ⊗ Population of cities ☐
G) ▲ Federal and Provincial Campsites ☐
H) ▲ Provincial Parks without Campsites ☐
I) Forest trails in National Parks ☐
J) ═ Road classification ☐
K) M-5 Grid system of location ☐

ii) Please indicate the three you find the most important, ranking them in decreasing order of importance, such as 1. - H) (most important)

1. __________ 2. __________ 3. __________

32. Which mileage information on the 1974 Alberta Road Map did you find the most useful? Please rank all those that you have used in their decreasing order of importance to you, such as 1 - most important, 2 - the next most important.



Between Towns and Junctions ☐
Between Dots ☐
Mileage chart ☐
Written distances LETHBRIDGE 386 Miles REGINA SASK ☐

33. In the lower left corner of the 1974 Alberta Road Map there is an explanation (legend) of many of the symbols appearing on the map.

i) Did you use it? YES ☐ NO ☐
ii) Are you satisfied with its location? YES ☐ NO ☐
iii) Did you find it satisfactory? YES ☐ NO ☐ If NO, explain why

____

34. Did you use the Vacation Planner, that is on the reverse side of the 1974 Alberta Road Map?

YES ☐ NO ☐

35. Did you use the 1974 City Plans of Alberta's major centres? YES ☐ NO ☐

36. Do you have any criticisms of:

i) The 1974 Alberta Road Map ______________________________

____

ii) The Vacation Planner ______________________________

____

iii) The City Plans ______________________________

____

37. Where do you live? City __________ Province/State __________

38. How long is this visit to Alberta? Days __________

39. Have you previously travelled in Alberta? YES ☐ NO ☐

APPENDIX F

QUESTIONNAIRE DISTRIBUTED TO ALBERTANS

(POPULATION A)

For location see back pocket.

APPENDIX G

QUESTIONNAIRE DISTRIBUTED TO VISITORS TO ALBERTA

(POPULATION B)

For location see back pocket.

APPENDIX H

FOLLOW-UP QUESTIONNAIRE DISTRIBUTED TO ALBERTANS (POPULATION A)

For location see back pocket.

APPENDIX I

QUESTIONNAIRE DISTRIBUTED TO ALBERTANS

(POPULATION A1)

For location see back pocket

APPENDIX J

LOCATION OF QUESTIONS IN APPENDIX E ON THE ACTUAL QUESTIONNAIRES (APPENDICES F,G,H,I)

LOCATION OF QUESTIONS IN
APPENDIX E ON THE ACTUAL QUESTIONNAIRES (APPENDICES F, G, H, I)

	Question Numbers			
	Population A		Population A1	Population B
Appendix E	(Appendix F)	(Appendix H)	(Appendix I)	(Appendix G)
1	1	-	1	-
2	2	-	2	4
3	-	2	3	5
4	3	-	4	6
5	4	-	-	-
6	-	1	5	7
7	5	-	6	8
8	6	-	14	16
9	7	-	16	18
10	-	7	17	19
11	8	-	19	21
12	9	-	-	-
13	10	-	7	9
14	11	-	8	10
15	12	-	9	11
16	-	3	10	12
17	-	4	11	13
18	-	5	12	14
19	-	6	13	15
20	-	8	15	17
21	-	9	18	20
22	-	10	20	22
23	-	11	-	23
24	-	12	-	24
25	-	13	-	25
26	-	14	-	26
27	-	15	-	27
28	-	16	-	28
29	-	17	-	29
30	-	18	-	30
31	-	19	-	31
32	-	20	-	32
33	-	21	-	33
34	-	22	21	34
35	-	23	22	35
36	-	24	23	1
37	-	-	-	2
38	-	-	-	3
39	-	-	-	-

Source: Research Data, 1975.

APPENDIX K

LETTER OF INTRODUCTION SENT TO ALBERTANS

(POPULATION A)

DEPARTMENT OF GEOGRAPHY
Telephone (403) 432-4158

QUAECUMQUE VERA

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

MAP USER SURVEY

I am a graduate student at the University of Alberta and in partial fulfilment of my Master's degree in the Department of Geography, I am carrying out a map user survey of the (enclosed) 1974 Alberta Official Road Map. The purpose of this project, which has not been carried out anywhere to date in Canada, is to find out who uses the map and for what purpose it is used. Most important I would like to know how satisfactory the information contained in the map is for your purposes. Even if you do not use the map I would still appreciate your filling out the enclosed questionnaire. The aim of the research, which has the full support of both the Department of Highways and Travel Alberta, is to lead to the improvement of the map.

The questionnaire which is part of this research is composed of two parts. The short questionnaire (enclosed) is to be filled out before any use is made of the 1974 Alberta Official Road Map. In early September of this year a longer, more detailed questionnaire will be sent to a selected sample of people who have received this short questionnaire. The longer questionnaire will ask map users about their use of the 1974 Alberta Official Road Map.

All the names and replies from these questionnaires will be treated as confidential, the results being processed in a general manner.

Accurate meaningful results on a survey of this kind depend on a high response rate and careful attention to the answers given to the questionnaire. Therefore, I would be very grateful if you would complete and return the attached questionnaire as quickly as possible. Should you have any problems or require further information about this research, please feel free to contact me at Travel Alberta, 10255 - 104 Street, Edmonton, Alberta T5J 1B1, (telephone) 424-0474. An addressed, postage-paid envelope is enclosed for your convenience.

Thank you for your assistance

J. M. Anderson

Jacqueline M. Anderson

APPENDIX L

LETTER OF INTRODUCTION SENT WITH THE FOLLOW-UP QUESTIONNAIRE TO ALBERTANS (POPULATION A)

DEPARTMENT OF GEOGRAPHY
TELEPHONE (403) 432-4158

THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA T6G 2H4

MAP USER SURVEY

4th September 1974

Dear

Thank you for completing and returning the questionnaire which you received with your copy of the 1974 Alberta Official Road Map. In my initial introductory letter I explained that this map user survey, which is part of my Master's degree in Geography, is to find out who uses the map and for what purpose it is used. More important I would like to know how satisfactory the information contained in the map is for your purposes.

The initial letter mentioned that the questionnaire, which is part of this research, was composed of two parts. The first part, the short questionnaire, which you kindly completed could be filled out before any use was made of the 1974 Alberta Official Road Map. The second part of the questionnaire (enclosed) deals with your use of this map and gives you the opportunity to give your opinions on the information contained in the map. Even if you did not use the map I would still appreciate your filling out the enclosed questionnaire.

All the names and replies from these questionnaires will be treated as confidential, the results being processed in a general manner.

Accurate meaningful results on a survey of this kind depend on a high response rate and careful attention to the answers given to the questionnaire. Therefore, I would be very grateful if you would complete and return the attached questionnaire as quickly as possible. Should you have any problems or require further information about this research, please feel free to contact me at the Department of Geography, University of Alberta, Edmonton, Alberta T6G 2H4 (telephone) 432-4158. An addressed, postage paid envelope is enclosed for your convenience.

Again thank you for your assistance

J. M. Anderson

Jacqueline M. Anderson

APPENDIX M

LETTER OF INTRODUCTION SENT TO ALBERTANS

(POPULATION A1)

DEPARTMENT OF GEOGRAPHY
TELEPHONE (403) 432-4158

THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA T6G 2H4

MAP USER SURVEY

4th September 1974

Dear

I am a graduate student at the University of Alberta and in partial fulfilment of my Master's degree in the Department of Geography, I am carrying out a map user survey of the 1974 Alberta Official Road Map. The purpose of this project, which has not been carried out anywhere to date in Canada, is to find out who uses the map and for what purpose it is used. More important I would like to know how satisfactory the information contained in the map is for your purposes. Even if you have not used the 1974 Alberta Official Road Map I would still appreciate your filling out the enclosed questionnaire. The aim of the research, which has the full support of both the Department of Highways and Travel Alberta, is to lead to the improvement of the map.

All the names and replies from the questionnaires will be treated as confidential, the results being processed in a general manner.

Accurate meaningful results on a survey of this kind depend on a high response rate and careful attention to the answers given to the questionnaire. Therefore, I would be very grateful if you would complete and return the attached questionnaire as quickly as possible. Should you have any problems or require further information about this research, please feel free to contact me at the Department of Geography, University of Alberta, Edmonton, Alberta T6G 2H4 (telephone) 432-4158. An addressed postage paid envelope is enclosed for your convenience.

Thank you for your assistance

J. M. Anderson

Jacqueline M. Anderson

APPENDIX N

POST CARD REMINDER
SENT TO ALBERTANS (POPULATION A1)

POST CARD REMINDER

SENT TO ALBERTANS (POPULATION A1)

Dear

On September 4th, you received a questionnaire relating to a Map User Survey of the 1974 Alberta Road Map.

Would you kindly complete this questionnaire as your reply is important to my work.

I look forward to hearing from you.

J. M. Anderson
Dept. of Geography — Univ. of Alberta
Edmonton, Alberta

APPENDIX O

MAPS SELECTED FOR THE GENERAL ANALYSIS OF ROAD MAPS

MAPS SELECTED FOR THE GENERAL ANALYSIS OF ROAD MAPS

OFFICIAL MAPS

Map	Year	Scale (R.F.) 1/to
CANADA		
1. British Columbia	1973/1974	1,254,240
2. Manitoba	1974	892,394
3. New Brunswick	1974	731,000
4. Newfoundland & Labrador	1974	950,400
5. Northwest Territories	1974	1,393,920
6. Nova Scotia	1974	576,000
7. Ontario	1974	1,070,873
8. Ontario, Northern	1974	1,397,647
9. Prince Edward Island	1974	243,692
10. Quebec	1974	768,000
11. Saskatchewan	1974	1,348,085
12. Yukon	1974	2,880,000
13. Canada Highway Map	1974	2,011,428
U.S.A.		
14. Alabama	1973	905,142
15. Alaska	1973	1,357,714
16. Arizona	1973	1,357,714
17. Arkansas	1974	792,000
18. California	1972	267,200
19. Colorado	1970	950,400
20. Connecticut	1974	211,200
21. Delaware	1971	211,200
22. Florida	1973/1974	1,056,000
23. Georgia	1974/1975	887,040
24. Idaho	1974	1,584,000
25. Illinois	1973	792,000
26. Indiana	1973/1974	633,600
27. Iowa	1973	905,142
28. Louisianna	1974	633,600
29. Maine	1974	633,600
30. Maryland	1974	380,160
31. Massachusetts	1973/1974	372,706
32. Michigan	1973	905,142
33. Minnesota	1973/1974	1,408,000
34. Mississippi	1973	792,000
35. Missouri	1974	792,000
36. Montana	1971	1,408,000
37. Nebraska	1974	1,408,000

continued...

continued:

OFFICIAL MAPS

Map	Year	Scale (R.F.) 1/to
38. Nevada	1973	1,584,000
39. New Hampshire	1973/1974	422,400
40. New Jersey	1972	281,600
41. New Mexico	1974	1,426,156
42. North Carolina	1973/1974	844,800
43. North Dakota	1973	267,200
44. Ohio	1973	633,600
45. Oklahoma	1973	792,000
46. Oregon	1974	905,142
47. Pennsylvania	1973	570,240
48. Rhode Island	1973/1974	126,720
49. South Carolina	1974	691,200
50. Tennessee	1972/1973	1,267,200
51. Texas	1974	1,490,824
52. Utah	1973	1,267,200
53. Vermont	1974	352,000
54. Virginia	1974	452,571
55. Washington	1974	1,044,395
56. West Virginia	1973	772,682
57. Wisconsin	1974	833,684
58. Wyoming	1974	1,152,000

COMMERCIAL MAPS

Map	Year	Scale (R.F.) 1/to	Company
CANADA			
59. Alberta, British Columbia	1973	1,584,000	Esso
60. Alberta, British Columbia	1974	2,475,000	Gulf
61. Alberta, British Columbia	1972	2,501,052	Shell
62. Alberta, British Columbia, Alaska	1971	3,105,882	American Oil
63. Alberta, British Columbia, Manitoba, Saskatchewan	1973	2,475,000	Mobile
64. Alberta, British Columbia, Manitoba, Saskatchewan	1973	1,980,000	Texaco
65. Manitoba, Saskatchewan	1973	1,775,000	Esso

continued...

continued:

COMMERCIAL MAPS

Map	Year	Scale (R.F.) 1/to	Company
66. Ontario	1974	1,873,931	Esso
67. Saskatchewan	1971	1,532,903	Saskatchewan Motor Association
68. Yellowhead	n.a.	2,862,650	-
U.S.A.			
69. California	1973	1,293,061	Mobile
70. Georgia	1973	1,092,413	Texaco
71. Hawaii	1973	633,600	Texaco
72. Kansas	1966	1,118,117	Conoco
73. New York	1972	140,800	Getty
74. Central States	1971	2,534,000	A.A.A.
75. Central and Western States	1973	3,126,315	Marathon
76. Eastern U.S.A.	1973	2,200,000	Gulf
77. Eastern U.S.A.	1974	2,956,800	Shell
78. Eastern U.S.A.	1973	2,230,985	Texaco
79. Western U.S.A.	1974	3,620,571	Esso
80. Western U.S.A.	1973	3,673,043	Exxon

APPENDIX F

A MAP USER SURVEY OF THE 1974 ALBERTA OFFICIAL ROAD MAP

Please answer all the questions to the best of your ability, marking only ONE answer unless otherwise stated. All answers will be treated as strictly confidential.

Thank you for your help.

1. Do you have a driver's licence? YES ☐ NO ☐

2. Do you own any of the following motor vehicles? Please circle all those that are relevant.

   CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, please specify...........

3. Are you a member of a motor association, eg., Alberta Motor Association (AMA)?

   YES ☐ NO ☐

4. How often do you use maps? (any kind)

   VERY INFREQUENTLY ☐ OCCASIONALLY ☐ OFTEN ☐ VERY OFTEN ☐

5. Have you had any training in map reading? Please mark the ONE most relevant.

   None ☐
   School ☐
   University ☐
   Technical Institute ☐
   Armed Forces ☐
   Other ☐ Please specify..

6. Have you ever used an Alberta Official Road Map? YES ☐ NO ☐ If NO, go to Question 9.

7. Have you used the 1973 Alberta Official Road Map? YES ☐ NO ☐ If NO, go to Question 9.

8. There is a marked difference in content between the 1973 and 1974 Alberta Official Road Maps. Which map do you prefer?

   i) 1973 ☐ 1974 ☐ NO PREFERENCE ☐

   ii) If you have a preference, please explain your reason for this preference........
   ....

9. For what major purpose do you expect to use the 1974 Alberta Official Road Map? Please mark ONE answer only.

   Tourist information primarily ☐
   Road information primarily ☐
   General reference (checking place names etc.) ☐
   Calculation of mileages for mileage claims ☐
   Other, please specify........................ ☐

10. Sex. FEMALE ☐ MALE ☐

11. Please indicate your age by checking ONE of the following groups.

    Under 18 ☐
    18 - 24 ☐
    25 - 29 ☐
    30 - 39 ☐
    40 - 49 ☐
    50 - 59 ☐
    60 - 64 ☐
    65 and over ☐

12. Please indicate which of the following you have completed by checking the most relevant box.

    Lower than grade 12 ☐
    Grade 12 or equivalent ☐
    Technical Institute or College diploma ☐
    A University degree ☐

Thank you for your assistance.

☐☐☐☐

APPENDIX G

1of

A MAP USER STUDY OF THE 1974 ALBERTA OFFICIAL ROAD MAP

Please answer all the questions, marking only ONE answer unless otherwise stated. Questions requiring your comments may be answered in the spaces provided after those questions. All answers will be treated as confidential.

Thank you for your help.

Miss J. M. Anderson
Department of Geography
University of Alberta
Edmonton, Alberta, Canada
T6G 2H4

1. Where do you live? City ____________ Province/State ____________

2. How long is this visit to Alberta? Days ____________

3. Have you previously travelled in Alberta? YES ☐ NO ☐

4. Do you own any of the following motor vehicles? Please circle all that are relevant.

   CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, please specify ____________

5. Have you rented or borrowed any of the following motor vehicles during the last three months? Please circle all that are relevant.

   NONE CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, specify ____________

6. Are you a member of a motor association (auto club) such as the Canadian/American Automobile Association (CAA, AAA)?

   YES ☐ NO ☐

7. In the past month how many times have you used maps? (any kind)

   No. of times (please enumerate) ____________

8. Have you had any training in map reading? Please mark the ONE most relevant.

   None ☐
   School ☐
   University ☐
   Technical Institute ☐
   Armed Forces ☐
   Other ☐ Please specify ____________

9. Sex. MALE ☐ FEMALE ☐

10. Please indicate your age by checking ONE of the following groups:

    Under 18 ☐
    18 - 24 ☐
    25 - 29 ☐
    30 - 39 ☐
    40 - 49 ☐
    50 - 59 ☐
    60 - 64 ☐
    65 and over ☐

11. Please indicate which of the following you have completed by checking the most relevant box.

    Lower than grade 12 ☐
    Grade 12 or equivalent ☐
    Technical Institute or College diploma ☐
    A University degree ☐

12. i) How many miles did you drive in the last twelve months? Approx. miles ____________

How long is this visit to Alberta? Days ______________

3. Have you previously travelled in Alberta? YES ☐ NO ☐

4. Do you own any of the following motor vehicles? Please circle all that are relevant.

CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, please specify ______________

5. Have you rented or borrowed any of the following motor vehicles during the last three months? Please circle all that are relevant.

NONE CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, specify ____________

6. Are you a member of a motor association (auto club) such as the Canadian/American Automobile Association (CAA, AAA)?

YES ☐ NO ☐

7. In the past month how many times have you used maps? (any kind)

No. of times (please enumerate) __________

8. Have you had any training in map reading? Please mark the ONE most relevant.

None ☐
School ☐
University ☐
Technical Institute ☐
Armed Forces ☐
Other ☐ Please specify ________________

2 of

9. Sex. MALE ☐ FEMALE ☐

10. Please indicate your age by checking ONE of the following groups:

Under 18	☐	30 - 39	☐	60 - 64	☐
18 - 24	☐	40 - 49	☐	65 and over	☐
25 - 29	☐	50 - 59	☐		

11. Please indicate which of the following you have completed by checking the most relevant box.

Lower than grade 12 ☐
Grade 12 or equivalent ☐
Technical Institute or College diploma ☐
A University degree ☐

12. i) How many miles did you drive in the last twelve months? Approx. miles __________
ii) How many of these miles did you drive outside cities? Approx. miles __________

13. Which ONE of the following categories best describes your motor travel, outside cities, in the last twelve months?

Business ☐
Vacation primarily ☐
General travel primarily ☐
Vacation and general travel ☐
Other, please specify ____________________ ☐

☐☐☐

3 of 1

14. During your motor travel, in the past twelve months, which of the following travel aids did you use? Please indicate your satisfaction of the information they contained for your requirements by checking ONE of the boxes, such as 'most satisfactory', for each travel aid which you used. Where possible please give examples such as, the map name - ONTARIO, and the year, 1971.

i)

	Unsatisfactory	Satisfactory	Most Satisfactory	Map Name	Year
A) Federal (Government) Road Map	☐	☐	☐	______	______
B) Official Provincial/State Road Map	☐	☐	☐	______	______
C) Oil Company Road Maps	☐	☐	☐	______	______
D) Motor Association Road Maps	☐	☐	☐	______	______
E) Road Atlas	☐	☐	☐	______	______
F) Topographic Sheet	☐	☐	☐		
G) Motor Association 'Triptik'	☐	☐	☐		
H) I did not travel last year ☐					

ii) Within Alberta, which of the relevant travel aids listed above, which you used, were the most useful? Please rank those that you used, listing them in decreasing order of importance, such as 1. - H) (most important).

1. ____________ 2. ____________ 3. ____________

15. What is the most that you would pay for a map specially designed for tourism?

Would never pay ☐ Maximum would pay ____________

16. Have you ever used an Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 18.

17. Why was your answer NO? Please check as many as apply.

- You do not use road maps ☐
- You prefered other maps ☐
- You knew the area in which you were travelling ☐
- You use road signs in preference to maps ☐
- You ask people for information ☐
- You did not know of the maps existence ☐
- You had difficulty in obtaining the map ☐

IF YOU ANSWERED "NO" IN QUESTION 16, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE.

Thank you for your assistance.

18. Have you used the 1973 Alberta Official Road Map? YES ☐ NO ☐

19. Have you used the 1974 Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 21.

20. From your use of an Alberta Official Road Map is there:

i) Any additional information that you would like to see included? ____________________

____

ii) Any criticism that you would like to make? ____________________

____

IF YOU ANSWERED "NO" IN QUESTION 19, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE.

Thank you for your assistance.

E) Road Atlas ☐ ☐ ☐ ________ ______

F) Topographic Sheet ☐ ☐ ☐

G) Motor Association 'Triptik' ☐ ☐ ☐

H) I did not travel last year ☐

ii) Within Alberta, which of the relevant travel aids listed above, which you used, were the most useful? Please rank those that you used, listing them in decreasing order of importance, such as 1. - H) (most important).

1. ____________ 2. ____________ 3. ____________

15. What is the most that you would pay for a map specially designed for tourism?

Would never pay ☐ Maximum would pay ____________

16. Have you ever used an Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 18.

17. Why was your answer NO? Please check as many as apply.

You do not use road maps ☐

You prefered other maps ☐

You knew the area in which you were travelling ☐

You use road signs in preference to maps ☐

You ask people for information ☐

You did not know of the maps existence ☐

You had difficulty in obtaining the map ☐

IF YOU ANSWERED "NO" IN QUESTION 16, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE.

Thank you for your assistance.

18. Have you used the 1973 Alberta Official Road Map? YES ☐ NO ☐

19. Have you used the 1974 Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 21.

20. From your use of an Alberta Official Road Map is there:

i) Any additional information that you would like to see included? ____________

____

ii) Any criticism that you would like to make? ____________

____

IF YOU ANSWERED "NO" IN QUESTION 19, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE.

Thank you for your assistance.

**NOTE: The following questions are to be answered ONLY by those who answered YES to Question 19.

21. There is a marked difference in content between the 1973 and 1974 Alberta Official Road Maps. If you have used both maps, which do you prefer?

i) 1973 ☐ 1974 ☐ NO PREFERENCE ☐

ii) If you have a preference, please explain your reason for this preference ____________

____

4 of 1

504

22. For what major purpose(s) did you use the 1974 Alberta Road Map? Please mark the relevant box(es) with an (X).

i) A) Tourist information primarily ☐
B) Road information primarily ☐
C) General reference (checking place names etc.) ☐
D) Calculation of mileages for mileage claims ☐
E) Other, please specify ______________________ ☐

ii) Please rank those that you have marked in decreasing order of their importance to you, such as 1. - A) (most important).

1. ___________ 2. ___________ 3. ___________

23. About how many times did you refer to the 1974 Alberta Road Map during an average day of travel?

No. of times (please enumerate) _________

24. Did you use the 1974 Alberta Road Map for planning your routes?

YES ☐ NO ☐ If NO, go to Question 26.

25. When you planned your routes, which ONE of the following was the most important?

Vacation primarily ☐
General travel primarily ☐
Business ☐
Vacation and general travel ☐

26. During your travel in Alberta who generally read the Alberta Road Map?

YOU (DRIVER) ☐
YOUR PASSENGER ☐

27. In general, if the driver was reading the map did he(she):

Stop to read the map ☐
Glance at it quickly while driving ☐

28. Have you used the information in the 1974 Alberta Travel Guide? YES ☐ NO ☐

29. Do you find the 1974 Alberta Road Map satisfactory in the following respects?

Clarity of symbols	YES ☐	NO ☐
Size of map sheet	YES ☐	NO ☐
Folding of the map	YES ☐	NO ☐
Quality of the paper	YES ☐	NO ☐
Clarity of the type	YES ☐	NO ☐

*Scale Want more detail ☐ Present scale Okay ☐ Want less detail ☐

*Scale refers to the area covered by a map. A large scale map covers a small area but has great detail. A small scale map covers a wider area but has less detail.

30. The following information does not appear on the 1974 Alberta Road Map. How important to you is it that these be included?

i)	NOT IMPORTANT	IMPORTANT	VERY IMPORTANT
Presentation of relief (elevation) as shown on the vacation planner	☐	☐	☐

1. ____________ 2. ____________ 3. ____________

23. About how many times did you refer to the 1974 Alberta Road Map during an average day of travel?

No. of times (please enumerate) ________

24. Did you use the 1974 Alberta Road Map for planning your routes?

YES ☐ NO ☐ If NO, go to Question 26.

25. When you planned your routes, which ONE of the following was the most important?

Vacation primarily ☐
General travel primarily ☐
Business ☐
Vacation and general travel ☐

26. During your travel in Alberta who generally read the Alberta Road Map?

YOU (DRIVER) ☐
YOUR PASSENGER ☐

27. In general, if the driver was reading the map did he(she):

Stop to read the map ☐
Glance at it quickly while driving ☐

6 of

28. Have you used the information in the 1974 Alberta Travel Guide? YES ☐ NO ☐

29. Do you find the 1974 Alberta Road Map satisfactory in the following respects?

Clarity of symbols	YES ☐	NO ☐
Size of map sheet	YES ☐	NO ☐
Folding of the map	YES ☐	NO ☐
Quality of the paper	YES ☐	NO ☐
Clarity of the type	YES ☐	NO ☐

*Scale Want more detail ☐ Present scale Okay ☐ Want less detail ☐

*Scale refers to the area covered by a map. A large scale map covers a small area but has great detail. A small scale map covers a wider area but has less detail.

30. The following information does not appear on the 1974 Alberta Road Map. How important to you is it that these be included?

i)	NOT IMPORTANT	IMPORTANT	VERY IMPORTANT
Presentation of relief (elevation) as shown on the vacation planner	☐	☐	☐
24 hour gas stations	☐	☐	☐
Administrative boundaries	☐	☐	☐
Railways	☐	☐	☐
24 hour breakdown services	☐	☐	☐
Danger spots	☐	☐	☐
24 hour restaurants	☐	☐	☐
Trailer waste disposal sites	☐	☐	☐

ii) Are there any more things that would make the map more useful to you and which are not listed above?

____

31. The following information is contained in the 1974 Alberta Road Map. If you find the information important to you please check with an (X).

i) A) River names ☐

B) Lake names ☐

C) Dams ☐

D) El. 3440 Height of cities ☐

E) △ 8747 Height of mountains ☐

F) ◉ ⊗ Population of cities ☐

G) ▲ Federal and Provincial Campsites ☐

H) Provincial Parks without Campsites ☐

I) Forest trails in National Parks ☐

J) ═ Road classification ☐

K) M-5 Grid system of location ☐

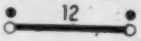
7 a

ii) Please indicate the three you find the most important, ranking them in decreasing order of importance, such as 1. - H) (most important)

1. ________ 2. ________ 3. ________

32. Which mileage information on the 1974 Alberta Road Map did you find the most useful? Please rank all those that you have used in their decreasing order of importance to you, such as 1 - most important, 2 - the next most important.

Between Towns and Junctions ☐

Between Dots  ☐

Mileage chart ☐

Written distances LETHBRIDGE 396 Miles REGINA, SASK ☐

33. In the lower left corner of the 1974 Alberta Road Map there is an explanation (legend) of many of the symbols appearing on the map.

i) Did you use it? YES ☐ NO ☐

ii) Are you satisfied with its location? YES ☐ NO ☐

iii) Did you find it satisfactory? YES ☐ NO ☐ If NO, explain why

____

34. Did you use the Vacation Planner, that is on the reverse side of the 1974 Alberta Road Map?

YES ☐ NO ☐

35. Did you use the 1974 City Plans of Alberta's major centres? YES ☐ NO ☐

36. Do you have any criticisms of:

i) The 1974 Alberta Road Map ______________________________

____

ii) The Vacation Planner ______________________________

____

iii) The City Plans ______________________________

____

F) ◉ ⁙ Population of cities ☐
G) ▲ Federal and Provincial Campsites ☐
H) ⏏ Provincial Parks without Campsites ☐
I) - - - Forest trails in National Parks ☐
J) ═ Road classification ☐
K) M-5 Grid system of location ☐

ii) Please indicate the three you find the most important, ranking them in decreasing order of importance, such as 1. - H) (most important)

1. ________ 2. ________ 3. ________

32. Which mileage information on the 1974 Alberta Road Map did you find the most useful? Please rank all those that you have used in their decreasing order of importance to you, such as 1 - most important, 2 - the next most important.

Between Towns and Junctions ○—5 / 7—○ ☐
Between Dots ● 12 ● ☐
Mileage chart ☐
Written distances LETHBRIDGE 396 Miles REGINA, SASK ☐

33. In the lower left corner of the 1974 Alberta Road Map there is an explanation (legend) of many of the symbols appearing on the map.

i) Did you use it? YES ☐ NO ☐
ii) Are you satisfied with its location? YES ☐ NO ☐
iii) Did you find it satisfactory? YES ☐ NO ☐ If NO, explain why
____

34. Did you use the Vacation Planner, that is on the reverse side of the 1974 Alberta Road Map?

YES ☐ NO ☐

35. Did you use the 1974 City Plans of Alberta's major centres? YES ☐ NO ☐

36. Do you have any criticisms of:

i) The 1974 Alberta Road Map ____
____

ii) The Vacation Planner ____
____

iii) The City Plans ____
____

Thank you for all your assistance.

Miss J. M. Anderson
Department of Geography
University of Alberta
Edmonton, Alberta, Canada
T6G 2H4

8 of 8

APPENDIX H

A MAP USER SURVEY OF THE 1974 ALBERTA OFFICIAL ROAD MAP

Please answer all the questions, marking only ONE answer unless otherwise stated. Questions requiring your comments may be answered in the spaces provided after those questions. All answers will be treated as confidential.

Thank you for your help.

1of

1. In the past month how many times have you used maps? (any kind)

No. of times (please enumerate) ____________

2. Have you rented or borrowed any of the following motor vehicles during the last three months? Please circle all that are relevant.

NONE CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, specify ____________

3. i) How many miles did you drive in the last twelve months? Approx. miles __________

ii) How many of these miles did you drive outside cities? Approx. miles __________

4. Which ONE of the following categories best describes your motor travel, outside cities, in the last twelve months?

Business	☐
Vacation primarily	☐
General travel primarily	☐
Vacation and general travel	☐
Other, please specify ____________	☐

5. During your motor travel, in the past twelve months, which of the following travel aids did you use? Please indicate your satisfaction of the information they contained for your requirements by checking ONE of the boxes, such as 'most satisfactory', for each travel aid which you used. Where possible please give examples such as, the map name - ONTARIO, and the year, 1971.

i)

	Unsatis-factory	Satis-factory	Most Sat-isfactory	Map Name	Year
A) Federal (Government) Road Map	☐	☐	☐	________	______
B) Official Provincial/State Road Map	☐	☐	☐	________	______
C) Oil Company Road Map	☐	☐	☐	________	______
D) Motor Association Road Maps	☐	☐	☐	________	______
E) Road Atlas	☐	☐	☐	________	______
F) Topographic Sheet	☐	☐	☐		
G) Motor Association 'Triptik'	☐	☐	☐		
H) I did not travel last year ☐					

ii) Within Alberta, which of the relevant travel aids listed above, which you used, were the most useful? Please rank those that you used, listing them in decreasing order of importance, such as 1. - H) (most important).

1. ____________ 2. ____________ 3. ____________

6. What is the most that you would pay for a map specially designed for tourism?

Would never pay Maximum would pay ____________

7. Have you used the 1974 Alberta Official Road Map, which you received earlier this year?

YES ☐ NO ☐ If YES, go to Question 10.

PLEASE TURN OVER

2 of

8. Why was your answer NO? Please check as many as apply.
   - You do not use road maps ☐
   - You prefered other maps ☐
   - You knew the area in which you were travelling ☐
   - You use road signs in preference to maps ☐
   - You ask people for information ☐

9. If you have used an Alberta Official Road Map is there:

   i) Any additional information that you would like to see included? ____________________

   ____

   ii) Any criticism that you would like to make? ____________________

   ____

   I have not used an Alberta Official Road Map ☐

IF YOU ANSWERED "NO" IN QUESTION 7, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE.

Thank you for your assistance.

10. For what major purpose(s) did you use the 1974 Alberta Official Road Map? Please mark the relevant box(es) with an (X).

    i) A) Tourist information primarily ☐
       B) Road information primarily ☐
       C) General reference (checking place names etc.) ☐
       D) Calculation of mileages for mileage claims ☐
       E) Other, please specify ____________ ☐

    ii) Please rank those that you have marked in decreasing order of their importance to you, such as 1. - A) (most important).

    1. ________ 2. ________ 3. ________

11. About how many times did you refer to the 1974 Alberta Road Map during an average day of travel?

    No. of times (please enumerate) ________

12. Did you use the 1974 Alberta Road Map for planning your routes?

    YES ☐ NO ☐ If NO, go to Question 14.

13. When you planned your routes, which ONE of the following was the most important?
    - Vacation primarily ☐
    - General travel primarily ☐
    - Business ☐
    - Vacation and general travel ☐

14. During your travel in Alberta who generally read the Alberta Road Map?
    - YOU (DRIVER) ☐
    - YOUR PASSENGER ☐

15. In general, if the driver was reading the map did he(she):
    - Stop to read the map ☐
    - Glance at it quickly while driving ☐

3 of

16. Have you used the information in the 1974 Alberta Travel Guide? YES ☐ NO ☐

17. Do you find the 1974 Alberta Road Map satisfactory in the following respects?

Clarity of symbols	YES ☐	NO ☐
Size of map sheet	YES ☐	NO ☐
Folding of the map	YES ☐	NO ☐
Quality of the paper	YES ☐	NO ☐
Clarity of the type	YES ☐	NO ☐

*Scale Want more detail ☐ Present scale Okay ☐ Want less detail ☐

**Scale refers to the area covered by a map. A large scale map covers a small area but has great detail. A small scale map covers a wider area but has less detail.

18. The following information does not appear on the 1974 Alberta Road Map. How important to you is it that these be included?

i)

	NOT IMPORTANT	IMPORTANT	VERY IMPORTANT
Presentation of relief (elevation) as shown on the vacation planner	☐	☐	☐
24 hour gas stations	☐	☐	☐
Administrative boundaries	☐	☐	☐
Railways	☐	☐	☐
24 hour breakdown services	☐	☐	☐
Danger spots	☐	☐	☐
24 hour restaurants	☐	☐	☐
Trailer waste disposal sites	☐	☐	☐

ii) Are there any more things that would make the map more useful to you which are not listed above?

____

19. The following information is contained in the 1974 Alberta Road Map. If you find the information important to you please check with an (X).

i) A)	River names	☐
B)	Lake names	☐
C) ⋟	Dams	☐
D) EL 3440'	Height of cities	☐
E) △ 8242	Height of mountains	☐
F) ◉ ⊗	Population of cities	☐
G) ▲	Federal and Provincial Campsites	☐
H) △	Provincial Parks without Campsites	☐
I) ⌒	Forest trails in National Parks	☐
J) ═	Road classification	☐
K) M-5	Grid system of location	☐

ii) Please indicate the three you find the most important, ranking them in decreasing order of importance, such as 1. - H) (most important).

1. ____________ 2. ____________ 3. ____________

PLEASE TURN OVER

4 of 4

20. Which mileage information on the 1974 Alberta Road Map did you find the most useful? Please rank all those that you used used in their decreasing order of importance to you, such as 1 - most important, 2 - the next most important.

Between Towns and Junctions ○ 5 / 7 ○ ☐
Between Dots ● 12 ● ☐
Mileage chart ☐
Written distances LETHBRIDGE 386 Miles REGINA, SASK. ☐

21. In the lower left corner of the 1974 Alberta Road Map there is an explanation (legend) of many of the symbols appearing on the map.

i) Did you use it? YES ☐ NO ☐
ii) Are you satisfied with its location? YES ☐ NO ☐
iii) Did you find it satisfactory? YES ☐ NO ☐ If NO, explain why ______________________

22. Did you use the Vacation Planner, that is on the reverse side of the 1974 Alberta Road Map?

YES ☐ NO ☐

22. Did you use the 1974 City Plans of Alberta's major centres? YES ☐ NO ☐

24. Do you have any criticisms of:

i) The 1974 Alberta Road Map ______________________
ii) The Vacation Planner ______________________
iii) The City Plans ______________________

Thank you for your assistance.

Miss J. M. Anderson
Department of Geography
University of Alberta
Edmonton, Alberta, Canada
T6G 2H4

☐☐☐☐

APPENDIX I

1 of

A MAP USER SURVEY OF THE 1974 ALBERTA OFFICIAL ROAD MAP

Please answer all the questions, marking only ONE answer unless otherwise stated. Questions requiring your comments may be answered in the spaces provided after those questions. All answers will be treated as confidential.

Thank you for your help.

1. Do you have a driver's licence? YES ☐ NO ☐

2. Do you own any of the following motor vehicles? Please circle all that are relevant.
CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, please specify ________

3. Have you rented or borrowed any of the following motor vehicles during the last three months? Please circle all that are relevant.
NONE CAR MOTORCYCLE TRUCK TRAILER/CAMPER OTHER, specify ________

4. Are you a member of a motor association, eg., Alberta Motor Association (AMA)?
YES ☐ NO ☐

5. In the past month how many times have you used maps? (any kind)
No. of times (please enumerate) ________

6. Have you had any training in map reading? Please mark the ONE most relevant.
   - None ☐
   - School ☐
   - University ☐
   - Technical Institute ☐
   - Armed Forces ☐
   - Other ☐ Please specify ________

7. Sex. MALE ☐ FEMALE ☐

8. Please indicate your age by checking ONE of the following groups:

Under 18 ☐	30 - 39 ☐	60 - 64 ☐
18 - 24 ☐	40 - 49 ☐	65 - and over ☐
25 - 29 ☐	50 - 59 ☐	

9. Please indicate which of the following you have completed by checking the most relevant box:
   - Lower than grade 12 ☐
   - Grade 12 or equivalent ☐
   - Technical Institute or College diploma ☐
   - A University degree ☐

10. i) How many miles did you drive in the last twelve months? Approx. miles ________
ii) How many of these miles did you drive outside cities? Approx. miles ________

11. Which ONE of the following categories best describes your motor travel, outside cities, in the last twelve months?
   - Business ☐
   - Vacation primarily ☐
   - General travel primarily ☐
   - Vacation and general travel ☐
   - Other, please specify ________ ☐

12. During your motor travel, in the past twelve months, which of the following travel aids did you use? Please indicate your satisfaction of the information they contained for your requirements by checking ONE of the boxes, such as 'most satisfactory', for each travel aid which you used. Where possible please give examples such as, the map name - ONTARIO, and the year, 1971.

1)	Unsatisfactory	Satisfactory	Most Satisfactory	Map Name	Year
A) Federal (Government) Road Map	☐	☐	☐	________	____
B) Official Provincial/State Road Map	☐	☐	☐	________	____
C) Oil Company Road Maps	☐	☐	☐	________	____

4. Are you a member of a motor association, eg., Alberta Motor Association (AMA)?

YES ☐ NO ☐

5. In the past month how many times have you used maps? (any kind)

No. of times (please enumerate) ____________

6. Have you had any training in map reading? Please mark the ONE most relevant.

None ☐
School ☐
University ☐
Technical Institute ☐
Armed Forces ☐
Other ☐ Please specify ______________

7. Sex. MALE ☐ FEMALE ☐

8. Please indicate your age by checking ONE of the following groups:

Under 18 ☐
18 - 24 ☐
25 - 29 ☐
30 - 39 ☐
40 - 49 ☐
50 - 59 ☐
60 - 64 ☐
65 - and over ☐

9. Please indicate which of the following you have completed by checking the most relevant box:

Lower than grade 12 ☐
Grade 12 or equivalent ☐
Technical Institute or College diploma ☐
A University degree ☐

2 of

10. i) How many miles did you drive in the last twelve months? Approx. miles __________

ii) How many of these miles did you drive outside cities? Approx. miles __________

11. Which ONE of the following categories best describes your motor travel, outside cities, in the last twelve months?

Business ☐
Vacation primarily ☐
General travel primarily ☐
Vacation and general travel ☐
Other, please specify ____________________ ☐

12. During your motor travel, in the past twelve months, which of the following travel aids did you use? Please indicate your satisfaction of the information they contained for your requirements by checking ONE of the boxes, such as 'most satisfactory', for each travel aid which you used. Where possible please give examples such as, the map name - ONTARIO, and the year, 1971.

i)	Unsatisfactory	Satisfactory	Most Satisfactory	Map Name	Year
A) Federal (Government) Road Map	☐	☐	☐	________	____
B) Official Provincial/State Road Map	☐	☐	☐	________	____
C) Oil Company Road Maps	☐	☐	☐	________	____
D) Motor Association Road Maps	☐	☐	☐	________	____
E) Road Atlas	☐	☐	☐	________	____
F) Topographic Sheet	☐	☐	☐		
G) Motor Association 'Triptik'	☐	☐	☐		
H) I did not travel last year	☐				

ii) Within Alberta, which of the following travel aids listed above, which you used, were the most useful? Please rank those that you used, listing them in decreasing order of importance, such as 1. - H) (most important).

1. __________ 2. __________ 3. __________

PLEASE TURN OVER

13. What is the most that you would pay for a map specially designed for tourism?

Would never pay   Maximum would pay ____________

14. Have you ever used an Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 16.

15. Why was your answer NO? Please check as many as apply.

You do not use road maps ☐
You prefered other maps ☐
You knew the area in which you were travelling ☐
You use road signs in preference to maps ☐
You ask people for information ☐
You did not know of the maps existence ☐
You had difficulty in obtaining the map ☐

3 of

IF YOU ANSWERED "NO" IN QUESTION 14, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE

Thank you for your assistance.

16. Have you used the 1973 Alberta Official Road Map? YES ☐ NO ☐

17. Have you used the 1974 Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 19.

18. From your use of an Alberta Official Road Map is there:

i) Any additional information that you would like to see included? ____________

ii) Any criticism that you would like to make? ____________

IF YOU ANSWERED "NO" TO QUESTION 17, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE

Thank you for your assistance.

19. There is a marked difference in content between the 1973 and 1974 Alberta Official Road Maps. If you have used both maps, which do you prefer?

i) 1973 ☐ 1974 ☐ NO PREFERENCE ☐

ii) If you have a preference, please explain your reason for this preference ____________

20. For what major purpose(s) did you use the 1974 Alberta Road Map? Please mark the relevant box(es) with an (X).

i) A) Tourist information primarily ☐
B) Road information primarily ☐
C) General reference (checking place names etc.) ☐
D) Calculation of mileages for mileage claims ☐
E) Other, please specify ____________ ☐

ii) Please rank those that you have marked in decreasing order of their importance to you, such as 1. - A) (most important).

1. ________ 2. ________ 3. ________

21. Did you use the Vacation Planner, that is on the reverse side of the 1974 Alberta Road Map?

YES ☐ NO ☐

22. Did you use the 1974 City Plans of Alberta's major centres? YES ☐ NO ☐

23. Do you have any criticisms of:

i) The 1974 Alberta Road Map ____________

ii) The Vacation Planner ____________

iii) The City Plans ____________

You did not know of the maps existence ☐

You had difficulty in obtaining the map ☐

IF YOU ANSWERED "NO" IN QUESTION 14, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE

Thank you for your assistance.

16. Have you used the 1973 Alberta Official Road Map? YES ☐ NO ☐

17. Have you used the 1974 Alberta Official Road Map? YES ☐ NO ☐ If YES, go to Question 19.

18. From your use of an Alberta Official Road Map is there:

i) Any additional information that you would like to see included? ____________________

____

ii) Any criticism that you would like to make? ____________________

____

IF YOU ANSWERED "NO" TO QUESTION 17, YOU HAVE NOW COMPLETED THE QUESTIONNAIRE

Thank you for your assistance.

19. There is a marked difference in content between the 1973 and 1974 Alberta Official Road Maps. If you have used both maps, which do you prefer?

i) 1973 ☐ 1974 ☐ NO PREFERENCE ☐

ii) If you have a preference, please explain your reason for this preference ________

____

4 of 4

20. For what major purpose(s) did you use the 1974 Alberta Road Map? Please mark the relevant box(es) with an (X).

i) A) Tourist information primarily ☐

B) Road information primarily ☐

C) General reference (checking place names etc.) ☐

D) Calculation of mileages for mileage claims ☐

E) Other, please specify ____________ ☐

ii) Please rank those that you have marked in decreasing order of their importance to you, such as 1. - A) (most important).

1. ________ 2. ________ 3. ________

21. Did you use the Vacation Planner, that is on the reverse side of the 1974 Alberta Road Map?

YES ☐ NO ☐

22. Did you use the 1974 City Plans of Alberta's major centres? YES ☐ NO ☐

23. Do you have any criticisms of:

i) The 1974 Alberta Road Map ____________________

____

ii) The Vacation Planner ____________________

____

iii) The City Plans ____________________

____

Thank you for your assistance.

Miss J. M. Anderson
Department of Geography
University of Alberta
Edmonton, Alberta, Canada
T6G 2H4

☐☐☐

INDEX TO PLACE NAMES IN ALBERTA

Abee H-6
Acadia Valley 166 L-8
Acme 320 L-6
Aden O-7
Aetna O-6
Airdrie 1,160 L-5
Alberta Beach 319 I-5
Alcomdale I-5
Alcurve I-8
Alder Flats 133 J-5
Aldersyde 88 M-5
Alhambra K-5
Alix 582 K-6
Alliance 291 K-7
Alpen Siding H-6
Alsike J-5
Altario 64 K-8
Amisk 125 J-7
Andrew 508 I-6
Anzac 114 F-7
Ardenode L-6
Ardmore 230 H-8
Ardrossan 137 I-6
Armena 55 J-6
Arrowwood 169 M-6
Ashmont 150 H-7
Aspen Beach (see Gull L.)
Athabasca 1,831 H-6
Atikameg 117 F-4
Atmore H-6

Balzac L-5
Banff 3,225 L-4
Barnwell 341 N-7
Barons 254 N-6
Barrhead 2,718 I-5
Bashaw 777 J-6
Bassano 855 M-6
Battle Bend K-7
Bawlf 193 J-6
Bay Tree F-1
Beach Corner I-5
Bearberry K-5
Bear Canyon F-1
Beaumont 337 J-6
Beauvallon 57 I-7
Beaver Crossing H-8
Beaverdam H-8
Beaverlodge 1,138 G-1
Beaver Mines N-5
Beazer O-6
Beiseker 407 L-6
Bellevue 1,174 N-5
Bellis 90 H-7
Benalto 94 K-5
Bentley 647 K-5
Bergen L-5
Berrymoor J-5
Berwyn 470 F-3
Bezanson 54 G-2
Big Coulee H-6
Big Valley 378 K-6
Bindloss M-8
Bittern Lake 90 J-6
Black Diamond 988 M-5
Blackfalds 877 K-5
Blackfoot 175 I-8
Blackie 182 M-6
Blairmore 2,013 N-5
Bloomsbury H-5
Blueberry Mountain F-2
Blue Ridge 239 I-4
Bluesky 124 F-2
Bluffton 98 J-5
Bodo K-8
Bon Accord 341 I-6
Bonanza F-1
Bonnyville 2,588 H-7
Botha 115 K-6
Bottrel L-5
Bow City M-7
Bowden 562 K-5
Bow Island 1,165 N-7
Boyle 507 H-6
Boyne Lake H-7
Bragg Creek 203 M-5
Brant M-6
Breton 447 J-5
Breynat G-6
Brocket N-6
Brooks 3,858 M-7
Brosseau I-7
Brownfield K-7
Brownvale 161 F-3
Bruce 110 J-7
Bruderheim 359 I-6
Brûlé 104 J-2
Buck Creek J-5
Buck Lake 159 J-5
Buffalo M-8
Buffalo Head Prairie D-4
Buffalo Lake G-2
Buford J-5
Burdett 219 N-7
Burmis N-5
Busby 65 I-5
Butte K-5
Byemoor 60 K-7

Cadogan 90 K-8
Cadomin 109 J-3
Cadotte Lake 192 F-4
Calahoo 62 I-5
Calais G-3
Calgary 412,777, L-5, M-5
Calling Lake G-6
Calmar 791 J-5
Cambria L-6
Camp Creek H-5
Camrose 8,988 J-6
Canmore 1,604 L-4
Canyon Creek 205 G-4
Carbon 401 L-6
Carcajou D-3
Cardston 2,721 O-6
Carmangay 270 N-6
Carnwood J-5
Caroline 353 K-5
Carseland 105 M-6
Carstairs 904 L-5
Carway O-6
Caslan 117 H-6
Castor 1,103 K-7
Cayley 133 M-5
Cereal 219 L-8
Cessford L-7
Champion 380 M-6
Chancellor L-6
Chard F-7
Chateh C-2
Chauvin 392 J-8
Cheadle L-6
Cherhill 62 I-5
Cherry Grove 76 H-8
Cherry Point F-1
Chief Mountain O-6
Chigwell K-6
Chin N-6
Chinook 100 L-8
Chinook Valley F-3
Chipewyan Lake 118 E-6
Chipman 164 I-6
Chisholm Mills 88 H-5
Clairmont 309 G-2
Clandonald 119 I-8
Claresholm 3,200 N-6
Clear Hills E-3
Clive 258 K-6
Cluny 74 M-6
Clyde 243 I-6
Coaldale 2,739 N-6
Coalhurst 426 N-6
Cochrane 1,101 L-5
Codesa F-2
Cold Lake 1,242 H-8
Coleman 1,400 N-5
Colinton 125 H-6
College Heights 331 K-5
Compeer 61 K-8
Condor 62 K-5
Conklin 119 G-7
Conrich L-5
Consort 670 K-8
Cooking Lake 196 I-6
Coronado I-6
Coronation 1,058 K-7
Countess M-7
Coutts 429 O-7
Cowley 233 N-5
Craigmyle 72 L-7
Cranford N-7
Cremona 181 L-5
Crooked Creek G-3
Crossfield 618 L-5
Crowsnest N-5
Cynthia 82 J-4
Czar 217 K-8

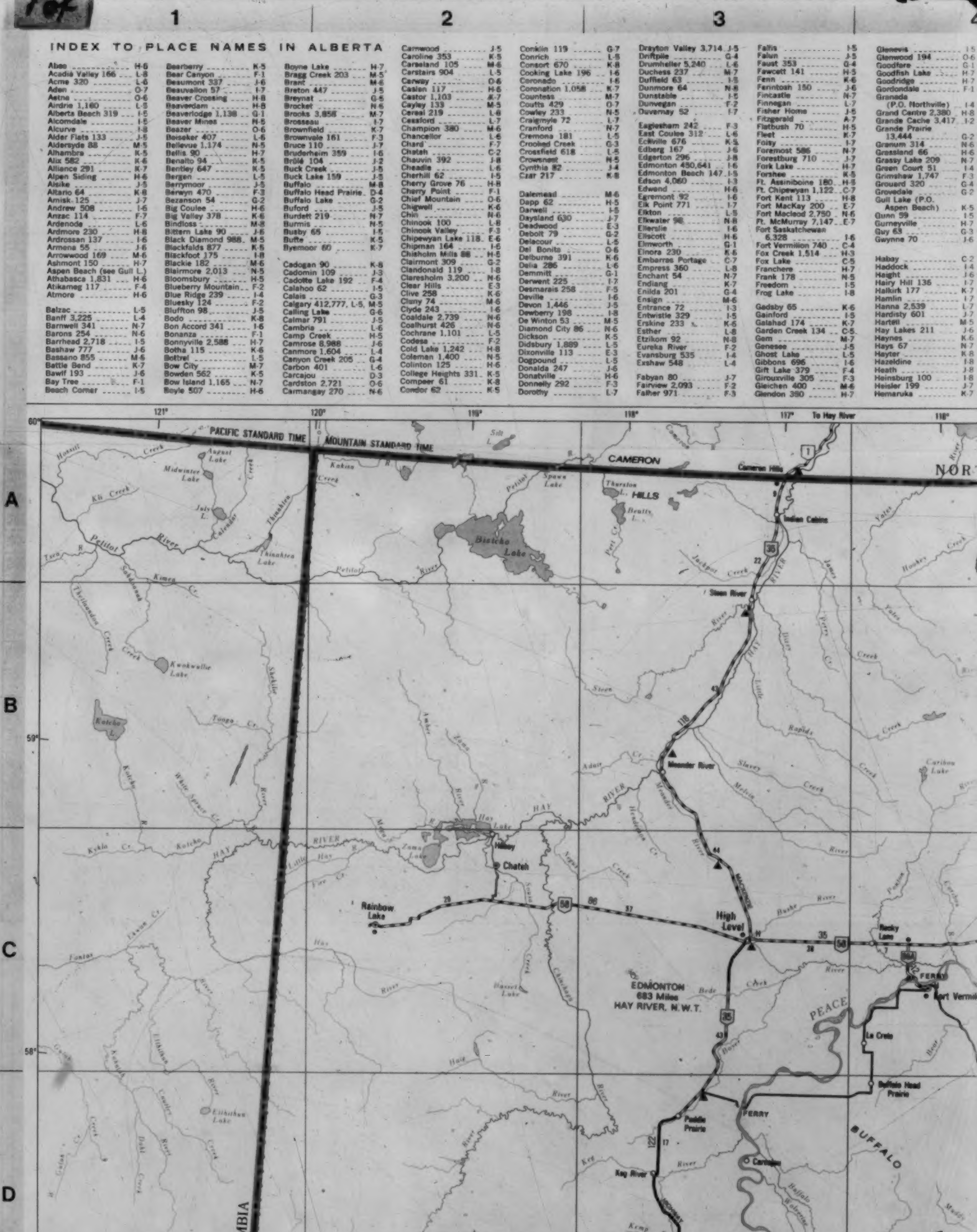
Dalemead M-6
Dapp 62 H-5
Darwell I-5
Daysland 630 J-7
Deadwood E-3
Debolt 79 G-2
Delacour L-5
Del Bonita O-6
Delburne 391 K-6
Delia 286 L-6
Demmitt G-1
Derwent 225 I-7
Desmarais 258 F-5
Deville I-6
Devon 1,446 J-5
Dewberry 198 I-8
De Winton 53 M-5
Diamond City 86 N-6
Dickson K-5
Didsbury 1,889 L-5
Dixonville 113 E-3
Dogpound L-5
Donalda 247 J-6
Donatville H-6
Donnelly 292 F-3
Dorothy L-7
Drayton Valley 3,714 J-5
Driftpile G-4
Drumheller 5,240 L-6
Duchess 237 M-7
Duffield 63 I-5
Dunmore 64 N-8
Dunstable I-5
Dunvegan F-2
Duvernay 52 I-7

Eaglesham 242 F-3
East Coulee 312 L-6
Eckville 676 K-5
Edberg 167 J-6
Edgerton 296 J-8
Edmonton 450,641 I-6
Edmonton Beach 147 I-5
Edson 4,060 I-3
Edwand H-6
Egremont 92 I-6
Elk Point 771 I-7
Elkton L-5
Elkwater 98 N-8
Ellerslie I-6
Ellscott H-6
Elmworth G-1
Elnora 230 K-6
Embarras Portage C-7
Empress 360 L-8
Enchant 54 N-7
Endiang K-7
Enilda 201 G-4
Ensign M-6
Entrance 72 I-3
Entwistle 329 I-5
Erskine 233 K-6
Esther L-8
Etzikom 92 N-8
Eureka River F-2
Evansburg 535 I-4
Exshaw 548 L-4

Fabyan 80 J-7
Fairview 2,093 F-2
Falher 971 F-3
Fallis I-5
Falun J-5
Faust 353 G-4
Fawcett 141 H-5
Fenn K-6
Ferintosh 150 J-6
Fincastle N-7
Finnegan L-7
Fisher Home J-5
Fitzgerald A-7
Flatbush 70 H-5
Fleet K-7
Foisy I-7
Foremost 586 N-7
Forestburg 710 J-7
Fork Lake H-7
Forshee K-5
Ft. Assiniboine 180 H-5
Ft. Chipewyan 1,122 C-7
Fort Kent 113 H-8
Fort MacKay 200 E-7
Fort Macleod 2,750 N-6
Ft. McMurray 7,147 E-7
Fort Saskatchewan 6,328 I-6
Fort Vermilion 740 C-4
Fox Creek 1,514 H-3
Fox Lake C-5
Franchere H-7
Frank 178 N-5
Freedom I-5
Frog Lake I-8

Gadsby 65 K-6
Gainford I-5
Galahad 174 K-7
Garden Creek 134 C-5
Gem M-7
Genesee J-5
Ghost Lake L-5
Gibbons 696 I-6
Gift Lake 379 F-4
Girouxville 305 F-3
Gleichen 400 M-6
Glendon 350 H-7
Glenevis I-5
Glenwood 194 O-6
Goodfare G-1
Goodfish Lake H-7
Goodridge H-7
Gordondale F-1
Granada (P.O. Northville) I-4
Grand Centre 2,380 H-8
Grande Cache 3,417 I-2
Grande Prairie 13,444 G-2
Granum 314 N-6
Grassland 66 H-6
Grassy Lake 209 N-7
Green Court 51 I-4
Grimshaw 1,747 F-3
Grouard 320 G-4
Grovedale G-2
Gull Lake (P.O. Aspen Beach) K-5
Gunn 59 I-5
Gurneyville H-7
Guy 63 G-3
Gwynne 70 J-6

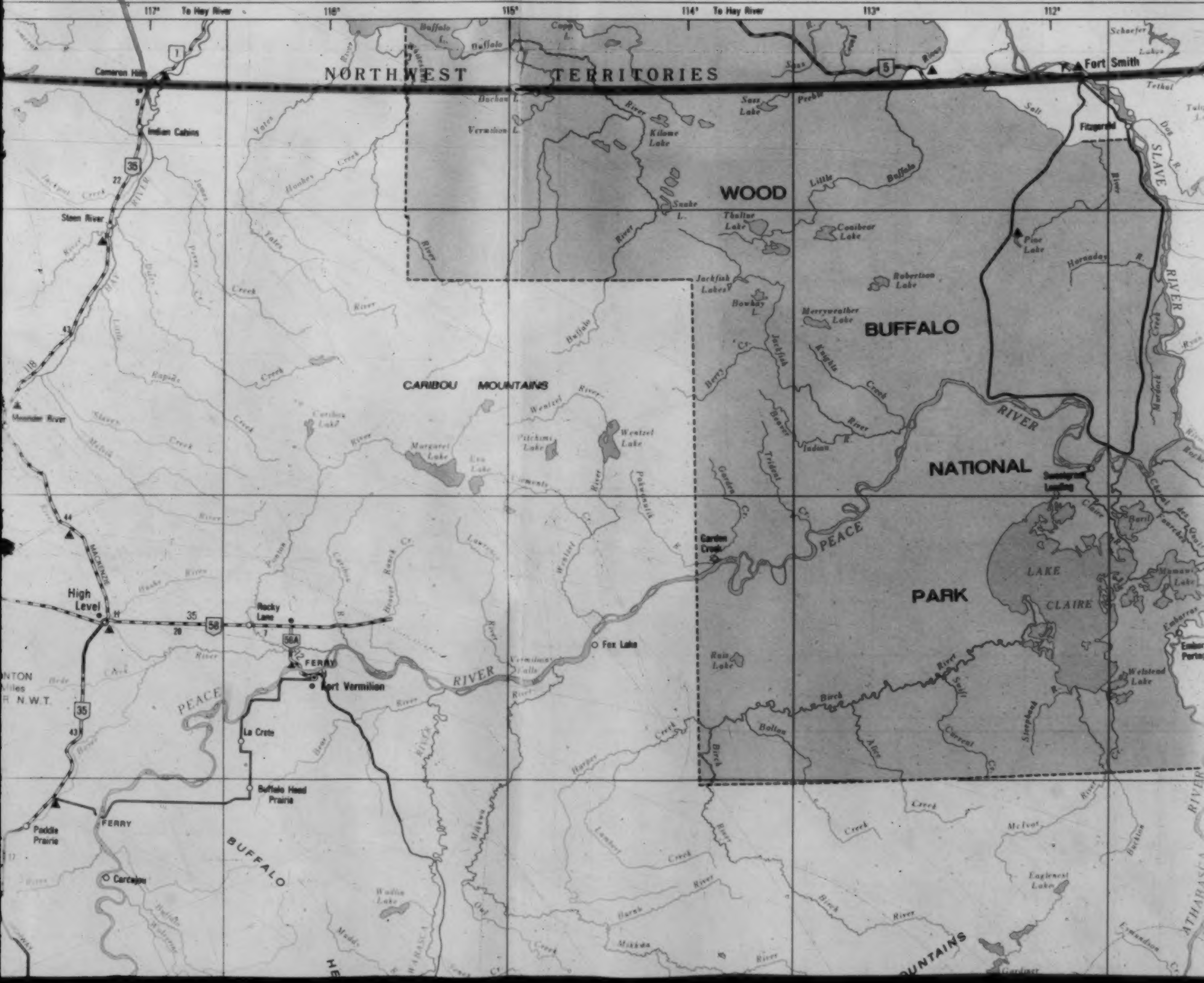
Habay C-2
Haddock I-4
Haight J-6
Hairy Hill 136 I-7
Halkirk 177 K-7
Hamlin I-7
Hanna 2,539 L-7
Hardisty 601 J-7
Hartell M-5
Hay Lakes 211 J-6
Haynes K-6
Hays 67 N-7
Hayter K-8
Hazeldine I-8
Heath J-8
Heinsburg 100 I-8
Heisler 199 J-7
Hemaruka K-7



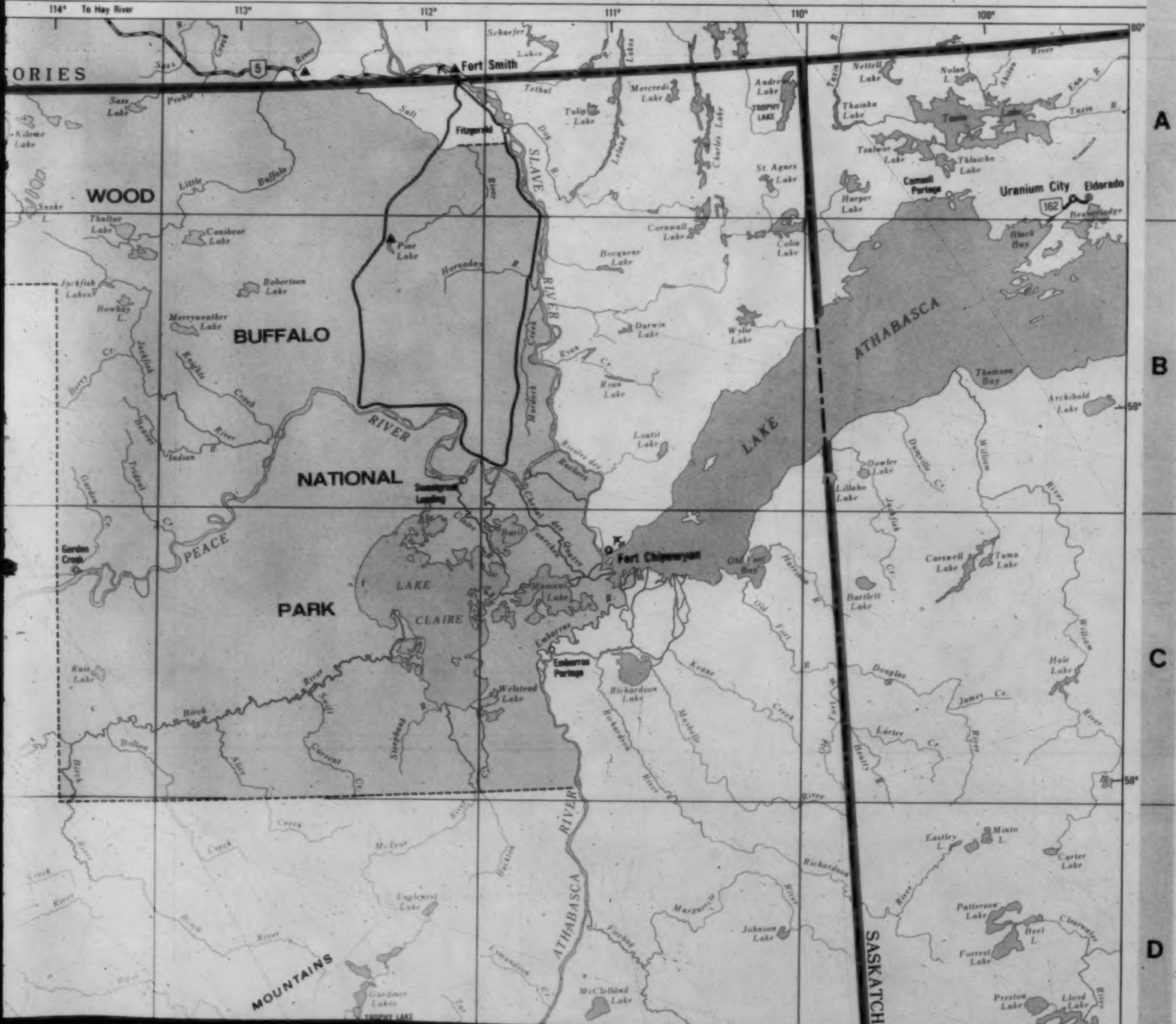
1
2
3
121°
120°
119°
118°
117°
To Hay River
116°
60°
59°
58°
A
B
C
D
PACIFIC STANDARD TIME
MOUNTAIN STANDARD TIME
CAMERON
HILLS
NOR
Cameron Hills
Indian Cabins
Steen River
Meander River
Bistcho Lake
Hay Lake
Habay
Chateh
Rainbow Lake
High Level
Rocky Lane
FERRY
Fort Vermilion
La Crete
Buffalo Head Prairie
Paddle Prairie
Carcajou
Keg River
PEACE
BUFFALO
EDMONTON 683 Miles HAY RIVER, N.W.T.
HAY RIVER
Petitot River
Kotcho L.
Kwokwullie Lake
Thinahtea Lake
Zama Lake
Eliithun Lake
Caribou Lake
Thurston L.
Beatty L.
Spawn Lake
Salt L.
August Lake
Midwinter Lake
Jolly L.
UMBIA

3 207 4 5 6

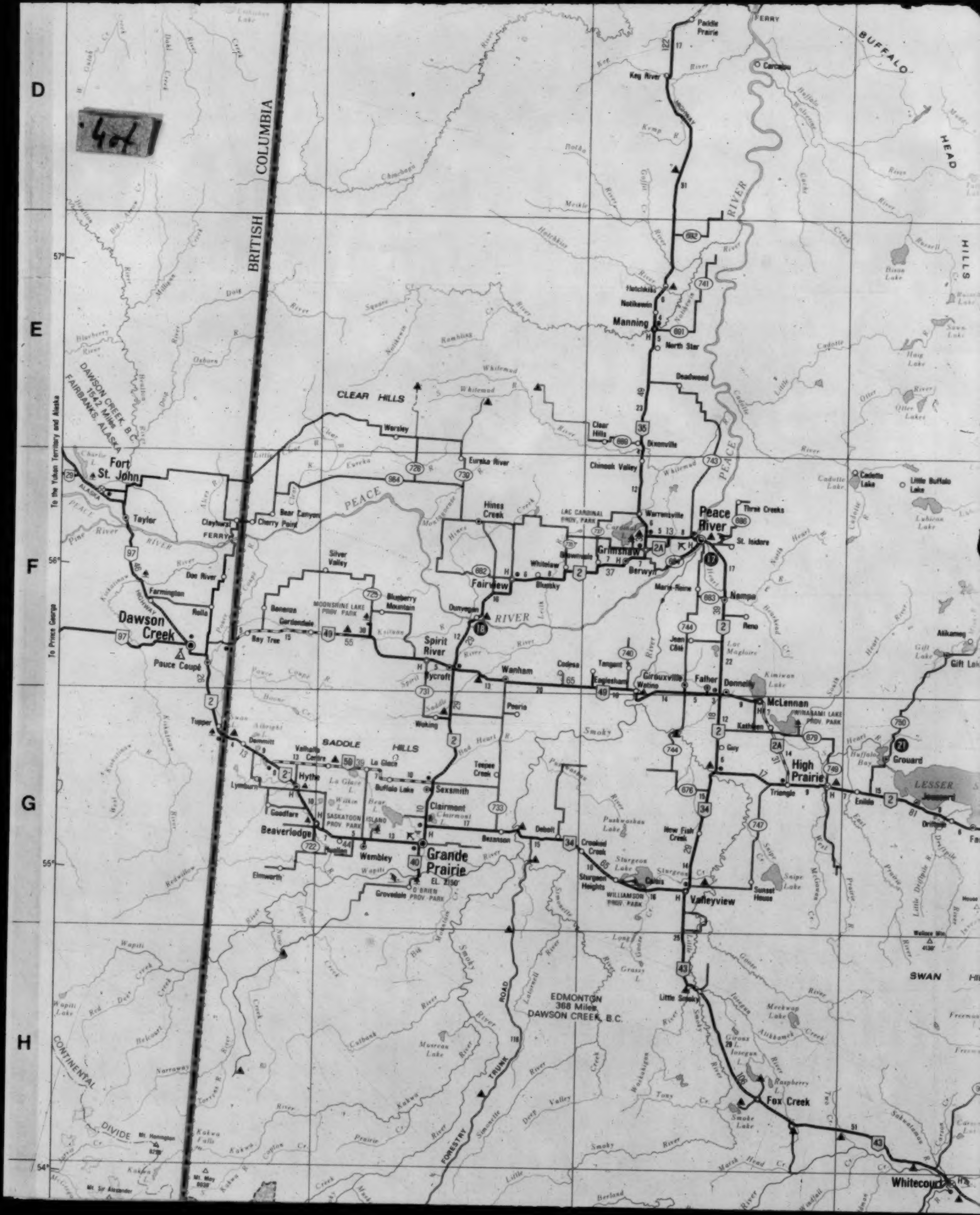
on Valley 3,714	J-5
le	G-4
heller 5,240	L-6
ss 237	M-7
d 63	I-5
ore 64	N-8
able	I-5
gan	F-2
nay 52	I-7
sham 242	F-3
ulee 312	L-6
e 676	K-5
167	J-6
ton 296	J-8
nton 450,641	I-6
nton Beach 147	I-5
4,060	I-3
d	H-6
ont 92	I-6
int 771	I-7
	L-5
er 98	N-8
e	I-6
t	H-6
orth	G-1
e230	K-6
rras Portage	C-7
ss 360	L-8
nt 54	N-7
nt	K-7
201	G-4
n	M-6
ce 72	I-3
ie 329	I-5
e 233	K-6
	L-8
m 92	N-8
River	F-2
burg 535	I-4
w 548	L-4
n 80	J-7
w 2,093	F-2
971	F-3
Fallis	I-5
Falun	J-5
Faust 353	G-4
Fawcett 141	H-5
Fenn	K-6
Fenntosh 150	J-6
Fincastle	N-7
Finnegan	L-7
Fisher Home	J-5
Fitzgerald	A-7
Flatbush 70	H-5
Fleet	K-7
Foisy	I-7
Foremost 586	N-7
Forestburg 710	J-7
Fork Lake	H-7
Forshee	K-5
Ft. Assiniboine 180	H-5
Ft. Chipewyan 1,122	C-7
Fort Kent 113	H-8
Fort MacKay 200	E-7
Fort Macleod 2,750	N-6
Ft. McMurray 7,147	E-7
Fort Saskatchewan 6,328	I-6
Fort Vermilion 740	C-4
Fox Creek 1,514	H-3
Fox Lake	C-5
Franchere	H-7
Frank 178	N-5
Freedom	I-5
Frog Lake	I-8
Gadsby 65	K-6
Gainford	I-5
Galahad 174	K-7
Garden Creek 134	C-5
Gem	M-7
Genesee	J-5
Ghost Lake	L-5
Gibbons 696	I-6
Gift Lake 379	F-4
Girouxville 305	F-3
Gleichen 400	M-6
Glendon 390	H-7
Glenevis	I-5
Glenwood 194	O-6
Goodfare	G-1
Goodfish Lake	H-7
Goodridge	H-7
Gordondale	F-1
Granada (P.O. Northville)	I-4
Grand Centre 2,380	H-8
Grande Cache 3,417	I-2
Grande Prairie 13,444	G-2
Granum 314	N-6
Grassland 66	H-6
Grassy Lake 209	N-7
Green Court 51	I-4
Grimshaw 1,747	F-3
Grouard 320	G-4
Grovedale	G-2
Gull Lake (P.O. Aspen Beach)	K-5
Gunn 59	I-5
Gurneyville	H-7
Guy 63	G-3
Gwynne 70	J-6
Habay	C-2
Haddock	I-4
Haight	J-6
Hairy Hill 136	I-7
Halkirk 177	K-7
Hamlin	I-7
Hanna 2,539	L-7
Hardisty 601	J-7
Hartell	M-5
Hay Lakes 211	J-6
Haynes	K-6
Hays 67	N-7
Hayter	K-8
Hazeldine	I-8
Heath	J-8
Heinsburg 100	I-8
Heisler 199	J-7
Hemaruka	K-7
Herronton	M-6
Hespero	K-5
High Level 1,621	C-3
High Prairie 2,650	G-3
Highridge	I-5
High River 2,621	M-5
Hilda 82	M-8
Hillcrest Mines 613	N-5
Hilliard 64	I-6
Hill Spring 190	O-6
Hines Creek 428	F-2
Hinton 4,690	I-3
Hoadley	J-5
Hobbema 51	J-6
Holden 503	J-7
Hondo	G-5
Hotchkiss	E-3
Huallen	G-2
Hughenden 263	K-7
Hussar 169	L-6
Huxley 68	K-6
Hylo	H-6
Hythe 480	G-1
Iddesleigh	M-7
Imperial Mills 118	G-7
Indian Cabins	A-3
Innisfail 2,470	K-5
Innisfree 245	I-7
Irma 436	J-7
Iron River	H-7
Iron Springs 59	N-6
Irricana 127	L-6
Irvine 201	N-8
Island Lake	H-6
Islay 94	I-8
Itaska Beach	J-5
James River Bridge	K-5
Jarvie 104	H-5
Jasper 3,592	J-2
Jean Côté 58	F-3
Jenner	M-7
Josephburg 157	I-6
Joussard 269	G-4
Kananaskis 73	L-4
Kapasiwin	I-5
Kathleen	G-3
Kathyrn	L-6
Kavanagh 54	J-6
Keephills	I-5
Keg River 69	D-3
Kelsey	J-6
Keoma	L-6
Kikino 202	H-7
Killam 867	J-7
Kingman 81	J-6
Kinsella 81	J-7
Kinuso 376	G-4
Kirkcaldy	M-6
Kirriemuir	K-8
Kitscoty 342	I-8
Lac La Biche 1,743	H-7
Lac la Nonne	I-5
Lacombe 3,228	K-5
La Corey	H-7
La Crete	C-4
Lafond	I-7
La Glace 92	G-2
Lake Isle	I-5
Lake Louise 165	L-4
Lamont 835	I-6
Lanfine	L-8
Langdon 109	M-6
Lavoy 120	I-7
Leavitt	O-5
Leduc 4,476	J-6
Leedale	K-5
Legal 565	I-6
Legend	N-7
Leslieville 159	K-5
Lethbridge 41,808	N-6
Linaria	H-5
Lindale	J-5
Lindbergh 50	I-8
Lindbrook	I-6
Linden 247	L-6
Lisburn	I-5
Little Buffalo Lake 165	F-4
Little Smoky 51	H-3
Lloydminster 8,183 (Alta. 4,420 Sask. 3,763)	I-8
Lodgepole 144	J-4
Lomond 175	M-6
Lone Pine	H-4
Longview 185	M-5
Looma	J-6
Loon Lake 135	E-4
Lougheed 252	J-7
Lousana	K-6
Lundbreck 113	N-5
Lyalta	L-6
Lymburn	G-1
MacKay	I-4
Madden	L-5
Magrath 1,226	O-6
Maleb	N-7
Mallaig 190	H-7
Ma-Me-O Beach 109	J-5
Manning 1,204	E-3
Mannville 683	I-7
Manola 51	I-5
Manyberries 81	N-8
Margie	G-7
Marie-Reine 83	F-3
Markerville	K-5
Marlboro 156	I-3
Marwayne 351	I-8
Mayerthorpe 1,042	I-4
McLaughlin 58	J-8
McLennan 1,157	G-3
McRae	H-7
Meadowview	I-5
Meander River 233	B-3
Meanook	H-6
Mearns	I-5
Medicine Hat 26,228	N-8
Medley 7,500	H-8
Meeting Creek	J-6
Menaik	J-6
Metiskow 66	K-8
Michichi	L-6
Michigan Centre	J-5
Milk River 861	O-7
Millarville	M-5
Millet 546	J-6
Millicent	M-7
Milo 126	M-6
Minburn 119	J-7
Mirror 419	K-6
Mission Beach	J-5
Monarch 102	N-6
Monitor 81	K-8
Morecambe	I-7
Morinville 1,251	I-6
Morley	L-5
Morningside 52	K-6
Morrin 220	L-6
Mossleigh	M-6
Mountain View 65	O-6
Mulhurst 139	J-5
Mundare 572	I-6
Munson 52	L-6
Musidora	I-7
Muskeg River 58	I-2
Myrnam 457	I-7
Nacmine 350	L-6
Namaka	M-6
Namao	I-6
Nampa 317	F-3
Nanton 940	M-5
Neerlandia 81	H-5
Nemiskam	N-7
Nestow	H-6
Nevis	K-6
New Brigden	L-8
Newbrook 154	H-6
New Dayton 65	N-7
New Fish Creek	G-3
New Norway 234	J-6
New Sarepta 211	J-6
Nightingale	L-6
Nisku	J-6
Niton Junction 68	I-4
Nobleford 401	N-6
Nojack	I-4
Norbuck	J-5
Nordegg 96	K-4
North Cooking Lake 96	I-6
North Star 87	E-3
Northville (see Granada)	I-4
Notikewin 70	E-3
Obed	I-3
Ohaton 68	J-6
Okotoks 1,245	M-5
Olds 3,459	L-5
Onefour	O-8
Onoway 485	I-5
Opal	I-6
Orion	N-8
Owendale	O-6
Owl River	H-7
Owlseye	I-7
Oyen 943	L-8
Paddle Prairie 80	D-3
Paradise Valley 174	J-8
Parkland 77	M-6
Patricia	M-7
Peace River 5,071	F-3
Peerless Lake 134	E-5
Peers 129	I-4
Pekisko	M-5
Pelican Portage	F-6
Pembridge	I-5
Pendryl	J-5
Penhold 420	K-5
Peona	G-2
Perryvale	H-6
Philomena	G-7
Pibroch 112	H-5
Pickardville 130	I-5
Picture Butte 1,062	N-6
Pincher	N-5
Pincher Creek 3,437	N-5
Pine Lake	K-6
Plamondon 190	H-6
Pocahontas	J-2
Poe	J-6
Pollockville	L-7
Ponoka 4,554	J-6
Priddis	M-5
Provost 1,502	K-8
Purple Springs	N-7
Queenstown	M-6
Radway 158	I-6
Rainbow Lake 580	C-2
Rainier	M-7
Ralston 475	M-7
Ranfurly 110	I-7
Raven	K-5
Raymond 2,063	N-6
Redcliff 2,242	N-8
Red Deer 27,571	K-5
Red Earth Creek 86	E-4
Redwater 1,358	I-6
Red Willow	K-6
Reno	F-3
Ribstone 64	J-8
Richdale	L-7
Rich Lake	H-7
Rich Valley	I-5
Ricinus	K-5
Rimbey 1,465	J-5
Rivercourse	J-8
Rivière Qui Barre	I-5
Robb 256	J-3
Rochester 111	H-6
Rochfort Bridge 63	I-4
Rochon Sands	K-6
Rockyford 285	L-6
Rocky Lane	C-4
Rocky Mountain House 3,124	K-5
Rocky Rapids 94	J-5
Rolling Hills 127	M-7

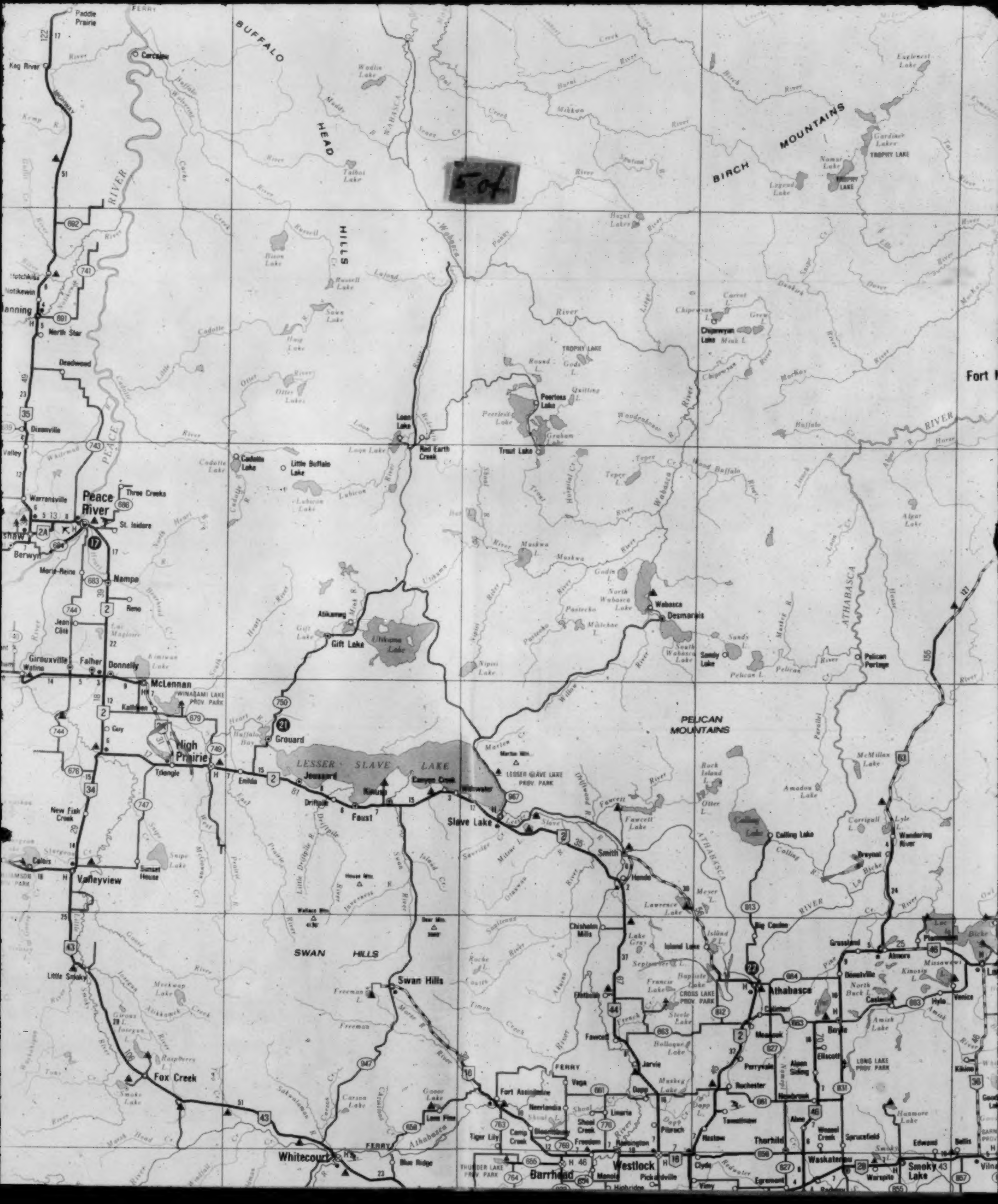

117°
To Hay River
116°
115°
114°
To Hay River
113°
112°
NORTHWEST TERRITORIES
Cameron Hills
Indian Cabins
Steen River
Meander River
High Level
Rocky Lane
FERRY
Fort Vermilion
La Crete
Buffalo Head Prairie
Paddle Prairie
FERRY
Carcajou
Fox Lake
Garden Creek
Sweetgrass Landing
Fitzgerald
Fort Smith
CARIBOU MOUNTAINS
WOOD BUFFALO NATIONAL PARK
PEACE RIVER
SLAVE RIVER
LAKE CLAIRE
BUFFALO HEAD HILLS
MACKENZIE
HAY RIVER
Buffalo L.
Vermilion L.
Kilome Lake
Thultue Lake
Conibear Lake
Pine Lake
Robertson Lake
Merryweather Lake
Jackfish Lakes
Bowbay L.
Margaret Lake
Eva Lake
Pitchimi Lake
Wentzel Lake
Caribou Lake
Rais Lake
Welstead Lake
Wadlin Lake
Englesist Lake
Schaefer Lakes
Peace Point
1
35
58
5
58A
Birch
Yates
Little Buffalo
Jackfish
Wentzel River
Lawrence
Mikkwa
Wabasca
ATHABASCA
MOUNTAINS

Little Buffalo Lake 165	F-4
Little Smoky 51	H-3
Lloydminster 8,183 (Alta. 4,420 Sask. 3,763)	I-8
Lodgepole 144	J-4
Lomond 175	M-6
Lone Pine	H-4
Longview 185	M-5
Looma	J-6
Loon Lake 135	E-4
Lougheed 252	J-7
Lousana	K-6
Lundbreck 113	N-5
Lyalta	L-6
Lymburn	G-1
MacKay	I-4
Madden	L-5
Magrath 1,226	O-6
Maleb	N-7
Mallaig 190	H-7
Ma-Me-O Beach 109	J-5
Manning 1,204	E-3
Mannville 683	I-7
Manola 51	I-5
Manyberries 81	N-8
Margie	G-7
Marie-Reine 83	F-3
Markerville	K-5
Marlboro 156	I-3
Marwayne 351	I-8
Mayerthorpe 1,042	I-4
McLaughlin 58	J-8
McLennan 1,157	G-3
McRae	H-7
Meadowview	I-5
Meander River 233	B-3
Meanook	H-6
Mearns	I-5
Medicine Hat 26,228	N-8
Medley 7,500	H-8
Meeting Creek	J-6
Menaik	J-6
Metiskow 66	K-8
Michichi	L-6
Michigan Centre	J-5
Milk River 861	O-7
Millarville	M-5
Millet 546	J-6
Millicent	M-7
Milo 126	M-6
Minburn 119	J-7
Mirror 419	K-6
Mission Beach	J-5
Monarch 102	N-6
Monitor 81	K-8
Morecambe	I-7
Morinville 1,251	I-6
Morley	L-5
Morningside 52	K-6
Morrin 220	L-6
Mossleigh	M-6
Mountain View 65	O-6
Mulhurst 139	J-5
Mundare 572	I-6
Munson 52	L-6
Musidora	I-7
Muskeg River 58	I-2
Myrnam 457	I-7
Nacmine 350	L-6
Namaka	M-6
Namao	I-6
Nampa 317	F-3
Nanton 940	M-5
Neerlandia 81	H-5
Nemiskam	N-7
Nestow	H-6
Nevis	K-6
New Brigden	L-8
Newbrook 154	H-6
New Dayton 65	N-7
New Fish Creek	G-3
New Norway 234	J-6
New Sarepta 211	J-6
Nightingale	L-6
Nisku	J-6
Niton Junction 68	I-4
Nobleford 401	N-6
Nojack	I-4
Norbuck	J-5
Nordegg 96	K-4
North Cooking Lake 96	I-6
North Star 87	E-3
Northville (see Granada)	I-4
Notikewin 70	E-3
Obed	I-3
Ohaton 68	J-6
Okotoks 1,245	M-5
Olds 3,459	L-5
Onefour	O-8
Onoway 485	I-5
Opal	I-6
Orion	N-8
Owendale	O-6
Owl River	H-7
Owlseye	I-7
Oyen 943	L-8
Paddle Prairie 80	D-3
Paradise Valley 174	J-8
Parkland 77	M-6
Patricia	M-7
Peace River 5,071	F-3
Peerless Lake 134	E-5
Peers 129	I-4
Pekisko	M-5
Pelican Portage	F-6
Pembridge	I-5
Pendryl	J-5
Penhold 420	K-5
Peoria	G-2
Perryvale	H-6
Philomena	G-7
Pibroch 112	H-5
Pickardville 130	I-5
Picture Butte 1,062	N-6
Pincher	N-5
Pincher Creek 3,437	N-5
Pine Lake	K-6
Plamondon 190	H-6
Pocahontas	J-2
Poe	J-6
Pollockville	L-7
Ponoka 4,554	J-6
Priddis	M-5
Provost 1,502	K-8
Purple Springs	N-7
Queenstown	M-6
Radway 158	I-6
Rainbow Lake 580	C-2
Rainier	M-7
Ralston 475	M-7
Ranfurly 110	I-7
Raven	K-5
Raymond 2,063	N-6
Redcliff 2,242	N-8
Red Deer 27,571	K-5
Red Earth Creek 86	E-4
Redwater 1,358	I-6
Red Willow	K-6
Reno	F-3
Ribstone 64	J-8
Richdale	L-7
Rich Lake	H-7
Rich Valley	I-5
Ricinus	K-5
Rimbey 1,465	J-5
Rivercourse	J-8
Rivière Qui Barre	I-5
Robb 256	J-3
Rochester 111	H-6
Rochfort Bridge 63	I-4
Rochon Sands	K-6
Rockyford 285	L-6
Rocky Lane	C-4
Rocky Mountain House 3,124	K-5
Rocky Rapids 94	J-5
Rolling Hills 127	M-7
Rolly View 55	J6
Rosalind 174	J-6
Rosebud 52	L-6
Rosedale 126	L-6
Rosemary 189	M-7
Rossington	H-5
Round Hill 97	J-6
Rowley	L-6
Royal Park	I-7
Rumsey 94	K-6
Rycroft 528	F-2
Ryley 469	J-6
St. Albert 12,637	I-6
St. Brides	I-7
St. Francis	J-5
St. Isidore	F-3
St. Lina 57	H-7
St. Michael 72	I-6
St. Paul 4,131	I-7
St. Vincent	H-7
Saddle Lake	I-7
Sandy Beach	I-5
Sandy Lake 86	F-6
Sangudo 377	I-5
Scandia	M-7
Scapa	K-7
Schuler 97	M-8
Scotfield	L-7
Seba Beach 163	I-5
Sedalia	L-8
Sedgewick 758	J-7
Seebe 108	L-4
Sentinel	N-5
Seven Persons 57	N-8
Sexsmith 491	G-2
Shaughnessy 323	N-6
Sheerness	L-7
Shepard	M-5
Sherwood Park 14,282	I-6
Shoal Creek	H-5
Shouldice	M-6
Sibbald 60	L-8
Silver Beach	J-5
Silver Valley	F-2
Skiff	N-7
Slave Lake 2,166	G-5
Smith 445	G-5
Smoky Lake 1,075	I-6
Spedden 71	H-7
Spirit River 1,130	F-2
Spondin	K-7
Spring Coulee 56	O-6
Sprucefield	H-6
Spruce Grove 3,320	I-5
Spruce View 104	K-5
Standard 267	L-6
Stand Off	N-6
Stanger	I-5
Stanmore	L-7
Star	I-6
Stauffer	K-5
Stavely 338	N-6
Steen River	B-3
Stettler 4,261	K-6
Stirling 416	N-6
Stony Plain 1,686	I-5
Strathmore 1,159	L-6
Streamstown	I-8
Strome 216	J-7
Sturgeon Heights	G-3
Suffield 70	M-7
Sundance Beach	J-5
Sundre 962	L-5
Sunnybrook 56	J-5
Sunnynook	L-7
Sunnyslope	L-6
Sunset House	G-3
Swalwell 51	L-6
Swan Hills 1,804	H-4
Sweetgrass Landing	B-6
Sylvan Lake 1,494	K-5
Taber 4,494	N-7
Talbot	K-7
Tangent 96	F-3
Tar Island	E-7
Tawatinaw	H-6
Teepee Creek	G-2
Tees 64	K-6
Telfordville	J-5
Therien 51	H-7
Thorhild 532	H-6
Thorsby 582	J-5
Three Creeks	F-3
Three Hills 1,385	L-6
Throne	K-7
Tiger Lily	H-5
Tilley 254	M-7
Tofield 1,078	I-6
Tolland	J-8
Tomahawk 66	I-5
Torrington 132	L-6
Travers	M-6
Triangle	G-3
Trochu 731	K-6
Trout Lake 162	F-5
Tulliby Lake	I-8
Turin 102	N-6
Turner Valley 808	M-5
Twin Butte	O-5
Two Hills 1,110	I-7
Usona	J-5
Valhalla Centre	G-2
Valleyview 1,849	G-3
Vauxhall 1,001	N-7
Vega	H-5
Vegreville 3,867	I-7
Venice	H-7
Vermilion 2,949	I-7
Veteran 264	K-7
Viking 1,198	J-7
Villeneuve	I-5
Vilna 344	I-7
Vimy 115	I-6
Violet Grove 94	J-4
Volcan 1,612	M-6
Wabamun 336	I-5
Wabasca 172	F-5
Wainwright 3,735	J-7
Walsh 59	N-8
Wandering River	G-6
Wanham 256	F-2
Warburg 453	J-5
Wardlow	M-7
Warner 446	O-7
Warrensville	F-3
Warspite 119	I-6
Warwick	I-7
Wasel	I-7
Waskatenau 254	I-6
Waterton Park 236	O-5
Water Valley	L-5
Watino 68	F-3
Waugh	I-6
Wayne 55	L-6
Weasel Creek	H-6
Welling 64	N-6
Wembley 360	G-2
Westcott	L-5
West Cove	I-5
Westerose	J-5
Westlock 3,422	I-5
Westward Ho 104	L-5
Wetaskiwin 6,510	J-6
Whitecourt 3,155	I-4
Whitelaw 192	F-2
Whitford	I-6
Widewater 126	O-4
Wild Horse	O-8
Wildwood 403	I-4
Willingdon 387	I-7
Wimborne 59	K-6
Winfield 209	J-5
Winnifred	N-7
Woking 85	G-2
Woodhouse	N-6
Woolford	O-6
Worsley 86	E-2
Wostok	I-6
Wrentham 75	N-7
Yeoford	J-5
Youngstown 357	L-7

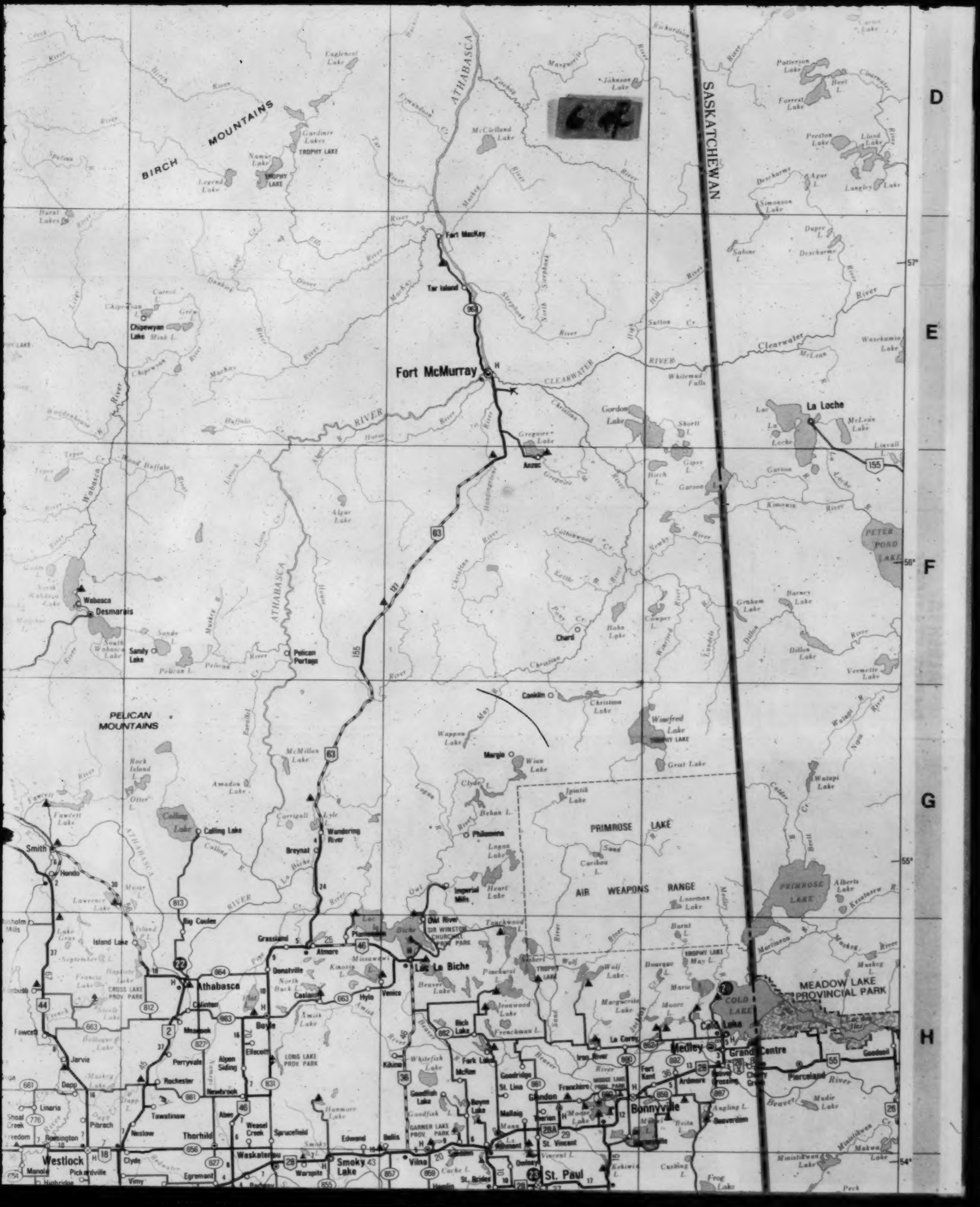

114°
To Hay River
113°
112°
111°
110°
109°
60°
59°
58°
A
B
C
D
ORIES
WOOD
BUFFALO
NATIONAL
PARK
MOUNTAINS
Fort Smith
Fitzgerald
Fort Chipewyan
Uranium City
Eldorado
Camsell Portage
Sweetgrass Landing
Embarras Portage
Garden Creek
SLAVE RIVER
PEACE RIVER
LAKE CLAIRE
LAKE ATHABASCA
ATHABASCA RIVER
SASKATCH
5
162
Salt
Little Buffalo
Pine Lake
Hornaday R.
Robertson Lake
Conibear Lake
Merryweather Lake
Knights Creek
Jackfish Lakes
Bowbay L.
Jackfish
Peace Point
Garden Cr.
Trident Cr.
Birch River
Baril L.
Mamawi Lake
Welstead Lake
Richardson Lake
Old Fort Bay
Old Fort R.
Tulip Lake
Mercredi Lake
Andrew Lake
TROPHY LAKE
St Agnes Lake
Colin Lake
Cornwall Lake
Bocquene Lake
Darwin Lake
Wylie Lake
Ryan Lake
Loutit Lake
Rivière des Rochers
Tazin Lake
Thainka Lake
Tsalwor Lake
Thluicho Lake
Harper Lake
Nettell Lake
Nolan L.
Beaverlodge L.
Black Bay
Thomson Bay
Archibald Lake
Dowler Lake
Lillabo Lake
Carswell Lake
Tuma Lake
Bartlett Lake
Hale Lake
William River
Douglas
James Cr.
Larter Cr.
Eastley L.
Minto L.
Carter Lake
Patterson Lake
Beel L.
Forrest Lake
Preston Lake
Lloyd Lake
Clearwater
Richardson River
Johnson Lake
McClelland Lake
Gardiner Lakes
Englenerd Lake
Marguerite
Firebag
McIvor
Gypsum

4of

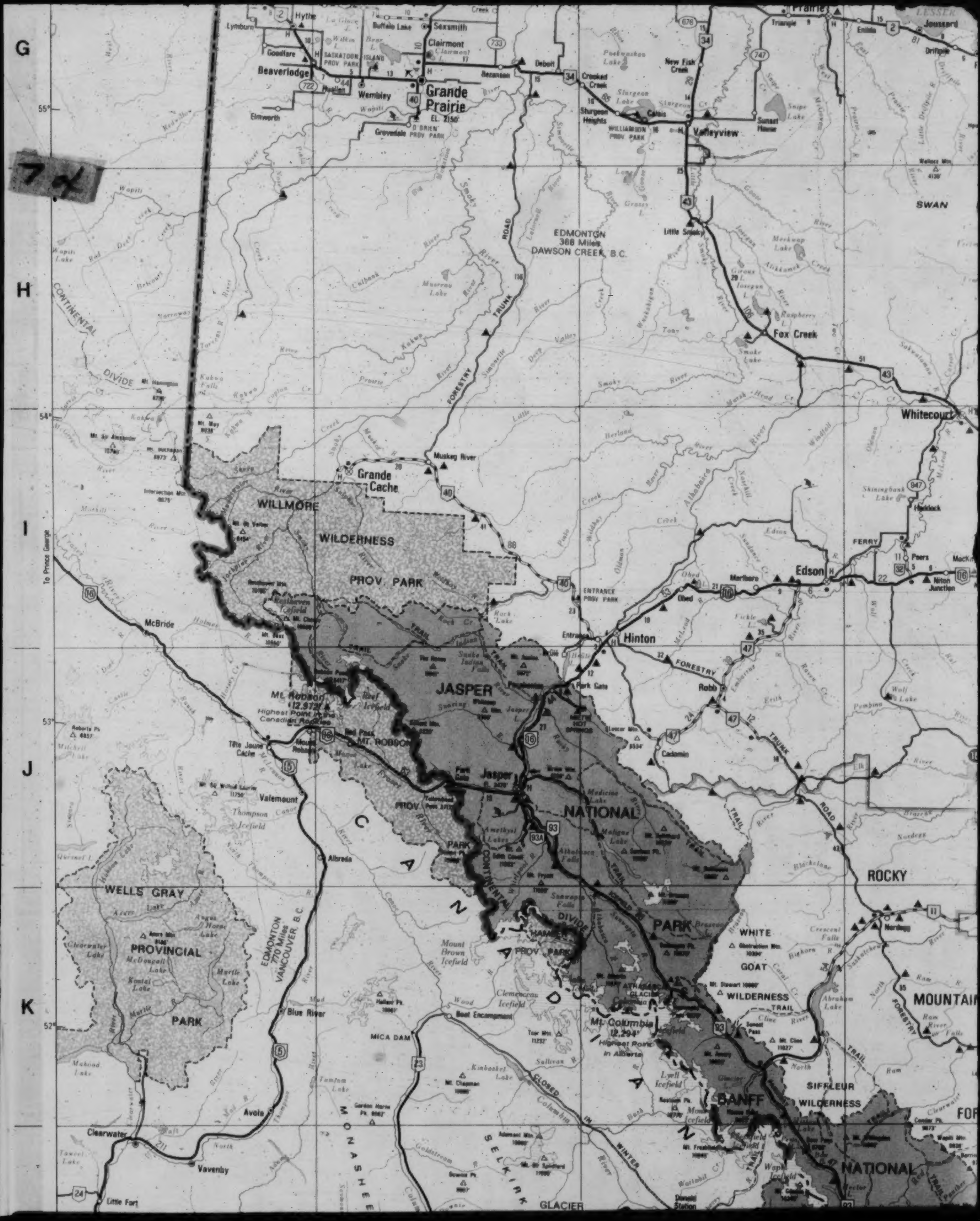

D
E
F
G
H
57°
56°
55°
54°
BRITISH COLUMBIA
BUFFALO HEAD HILLS
CLEAR HILLS
SADDLE HILLS
SWAN HILLS
CONTINENTAL DIVIDE
DAWSON CREEK, B.C. 1542 Miles FAIRBANKS, ALASKA
EDMONTON 368 Miles DAWSON CREEK, B.C.
To the Yukon Territory and Alaska
To Prince George
Paddle Prairie
Keg River
Carcajou
FERRY
Hotchkiss
Notikewin
Manning
North Star
Deadwood
Clear Hills
Dixonville
Chinook Valley
Warrensville
Worsley
Eureka River
Hines Creek
Cherry Point
Bear Canyon
Clayhurst
Fort St. John
Taylor
Doe River
Farmington
Rolla
Dawson Creek
Pouce Coupé
Tupper
Demmitt
Silver Valley
Blueberry Mountain
MOONSHINE LAKE PROV. PARK
Bonanza
Gordondale
Bay Tree
Spirit River
Rycroft
Wanham
Codesa
Tangent
Eaglesham
Girouxville
Watino
Falher
Donnelly
McLennan
WINAGAMI LAKE PROV. PARK
Kathleen
High Prairie
Triangle
Enilda
Joussard
LESSER
Grouard
Buffalo Bay
Gift Lake
Atikameg
Cadotte Lake
Little Buffalo Lake
Bison Lake
Haig Lake
Otter Lakes
Lubicon Lake
LAC CARDINAL PROV. PARK
Grimshaw
Brownvale
Berwyn
Whitelaw
Bluesky
Fairview
Dunvegan
Peace River
Three Creeks
St. Isidore
Nampa
Reno
Marie-Reine
Jean Côté
Lac Magloire
Guy
Peoria
Woking
Valhalla Centre
La Glace
Teepee Creek
Hythe
Lymburn
Buffalo Lake
Sexsmith
Clairmont
Goodfare
Beaverlodge
SASKATOON ISLAND PROV. PARK
Wembley
Grande Prairie EL. 2190
Bezanson
Debolt
Crooked Creek
Sturgeon Heights
Calais
WILLIAMSON PROV. PARK
Valleyview
Sunset House
New Fish Creek
Elmworth
Grovedale
O'BRIEN PROV. PARK
Little Smoky
Fox Creek
Whitecourt
Mt. Sir Alexander
Mt. May 6030
Mt. Hannington
Wallace Mtn. 4130
Kakwa Falls
FORESTRY TRUNK ROAD
PEACE RIVER
Smoky
Wapiti
Kakwa
Simonette
Little Smoky
Sturgeon Lake
Snipe Lake
Kimiwan Lake
Puskwaskau Lake
Long L.
Grassy L.
Musreau Lake
Smoke Lake
Raspberry L.
Iosegun L.
Giroux L.
Meekwap Lake
Cadotte
Whitemud
Notikewin
Hotchkiss
Chinchaga
Heart
2
2A
34
35
40
43
49
97
18
17
21
29
59
731
733
722
725
726
730
737
740
741
743
744
747
749
750
676
679
682
683
684
686
689
691
692
964
722

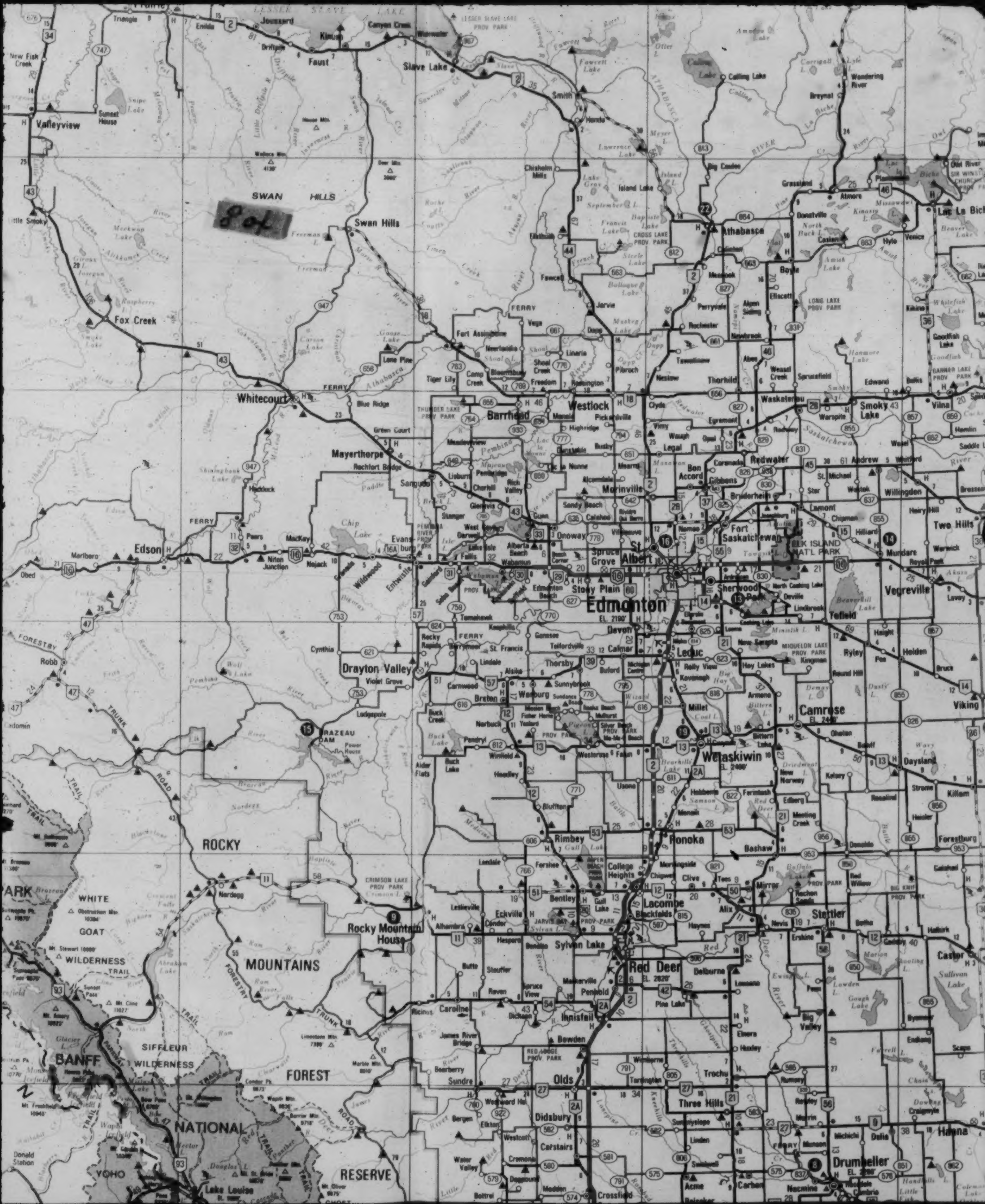

Paddle Prairie
Keg River
Carcajou
BUFFALO HEAD HILLS
BIRCH MOUNTAINS
Wadlin Lake
Talbot Lake
Eaglenest Lake
Gardiner Lakes
Namur Lake
Legend Lake
TROPHY LAKE
Hotchkiss
Notikewin
Manning
North Star
Deadwood
Dixonville
Warrensville
Peace River
Three Creeks
St. Isidore
Berwyn
Marie-Reine
Nampa
Reno
Jean Côté
Girouxville
Falher
Donnelly
Watino
McLennan
Kathleen
WINAGAMI LAKE PROV. PARK
Guy
High Prairie
Triangle
Enilda
Grouard
Joussard
Kinuso
Faust
Driftpile
Canyon Creek
Widewater
Slave Lake
LESSER SLAVE LAKE
LESSER SLAVE LAKE PROV. PARK
Marten Mtn.
Smith
Hondo
Red Earth Creek
Loon Lake
Cadotte Lake
Little Buffalo Lake
Atikameg
Gift Lake
Utikuma Lake
Peerless Lake
Trout Lake
Chipewyan Lake
Wabasca
Desmarais
Sandy Lake
Pelican Portage
PELICAN MOUNTAINS
Calling Lake
Wandering River
Fort M
New Fish Creek
Calais
Valleyview
Sunset House
Snipe Lake
House Mtn.
Wallace Mtn.
Deer Mtn.
SWAN HILLS
Swan Hills
Little Smoky
Fox Creek
Whitecourt
Blue Ridge
Chisholm Mills
Island Lake
Big Coulee
Athabasca
CROSS LAKE PROV. PARK
Flatbush
Fawcett
Jarvie
Colinton
Meanook
Perryvale
Rochester
Dapp
Fort Assiniboine
Neerlandia
Vega
Tiger Lily
Camp Creek
Barrhead
THUNDER LAKE PROV. PARK
Westlock
Pickardville
Clyde
Thorhild
Egremont
Waskatenau
Smoky Lake
Grassland
Atmore
Donatville
Boyle
Ellscott
LONG LAKE PROV. PARK
Venice
Hylo
Caslan
Spruceland
Newbrook
Abee
Warspite
Edwand
Radway
ATHABASCA RIVER
PEACE RIVER

5 of

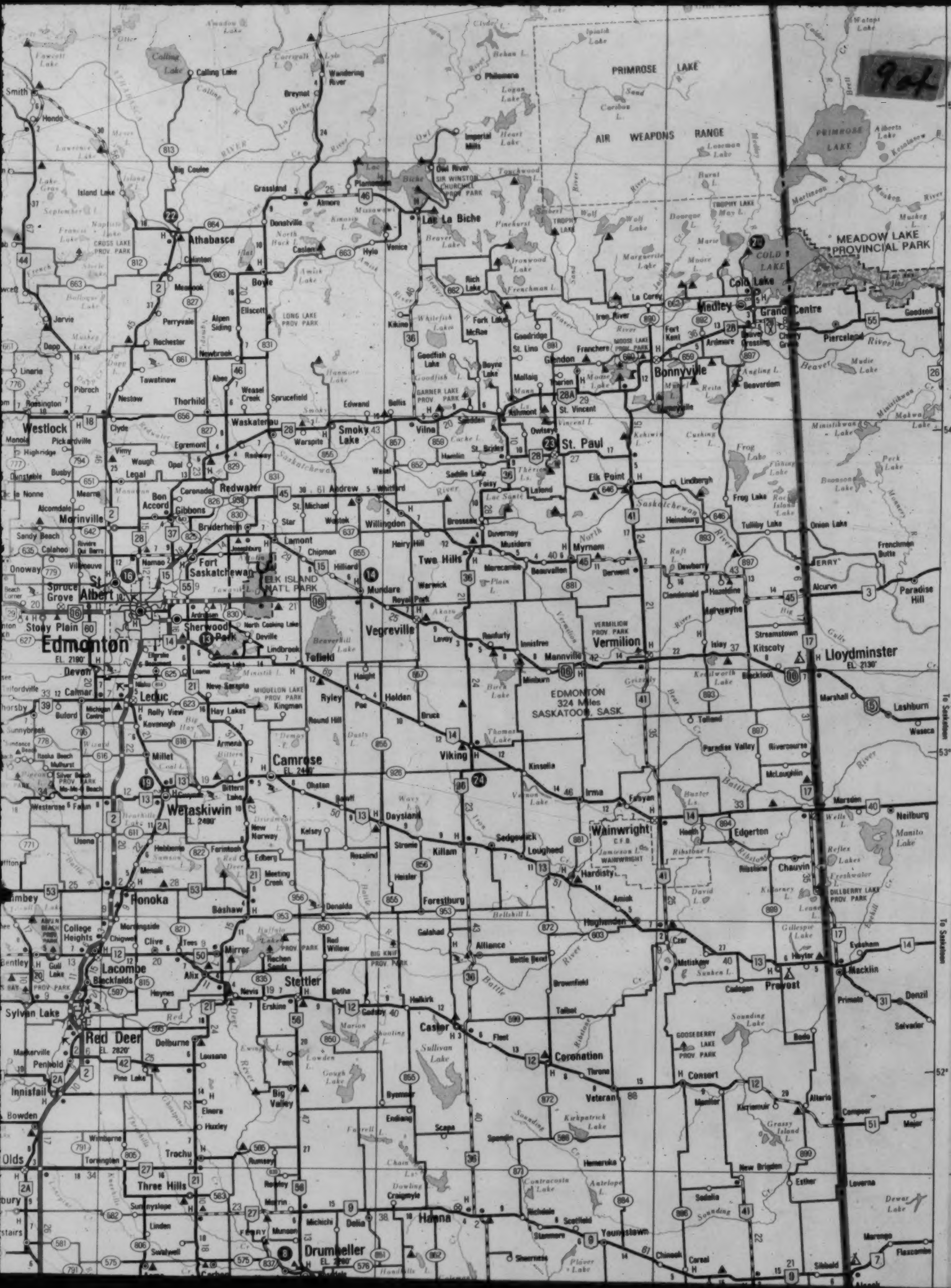
D
E
F
G
H
57°
56°
55°
54°
BIRCH MOUNTAINS
ATHABASCA
SASKATCHEWAN
Fort MacKay
Tar Island
Fort McMurray
CLEARWATER RIVER
Gordon Lake
La Loche
PETER POND LAKE
Anzac
Gregoire Lake
Chipewyan Lake
Wabasca
Desmarais
Sandy Lake
Pelican Portage
Chard
Conklin
Winefred Lake
PELICAN MOUNTAINS
Calling Lake
Margie
Wandering River
Breynat
Philomena
PRIMROSE LAKE
AIR WEAPONS RANGE
Imperial Mills
Owl River
Smith
Hondo
Big Coulee
Athabasca
Lac La Biche
Plamondon
Atmore
Grassland
Boyle
Venice
Hylo
Caslan
COLD LAKE
Cold Lake
MEADOW LAKE PROVINCIAL PARK
Medley
Grand Centre
Pierceland
Bonnyville
Glendon
St. Paul
Vilna
Smoky Lake
Waskatenau
Thorhild
Westlock
Clyde
Jarvie
Rochester
Perryvale
Colinton
Meanook
Ellscott
Kikino
Elk Point
Fort Kent
Ardmore
Beaverdam
La Corey
Iron River
Fork Lake
St. Lina
Mallaig
Goodfish Lake
Ashmont
Spedden
Edwand
Newbrook
Abee
Radway
Warspite
Egremont
Vimy
Pickardville
Tawatinaw
Nestow
Dapp
Pibroch
Rossington
Linaria
63
155
881
28
36
55
46
2
44
18
28A
29

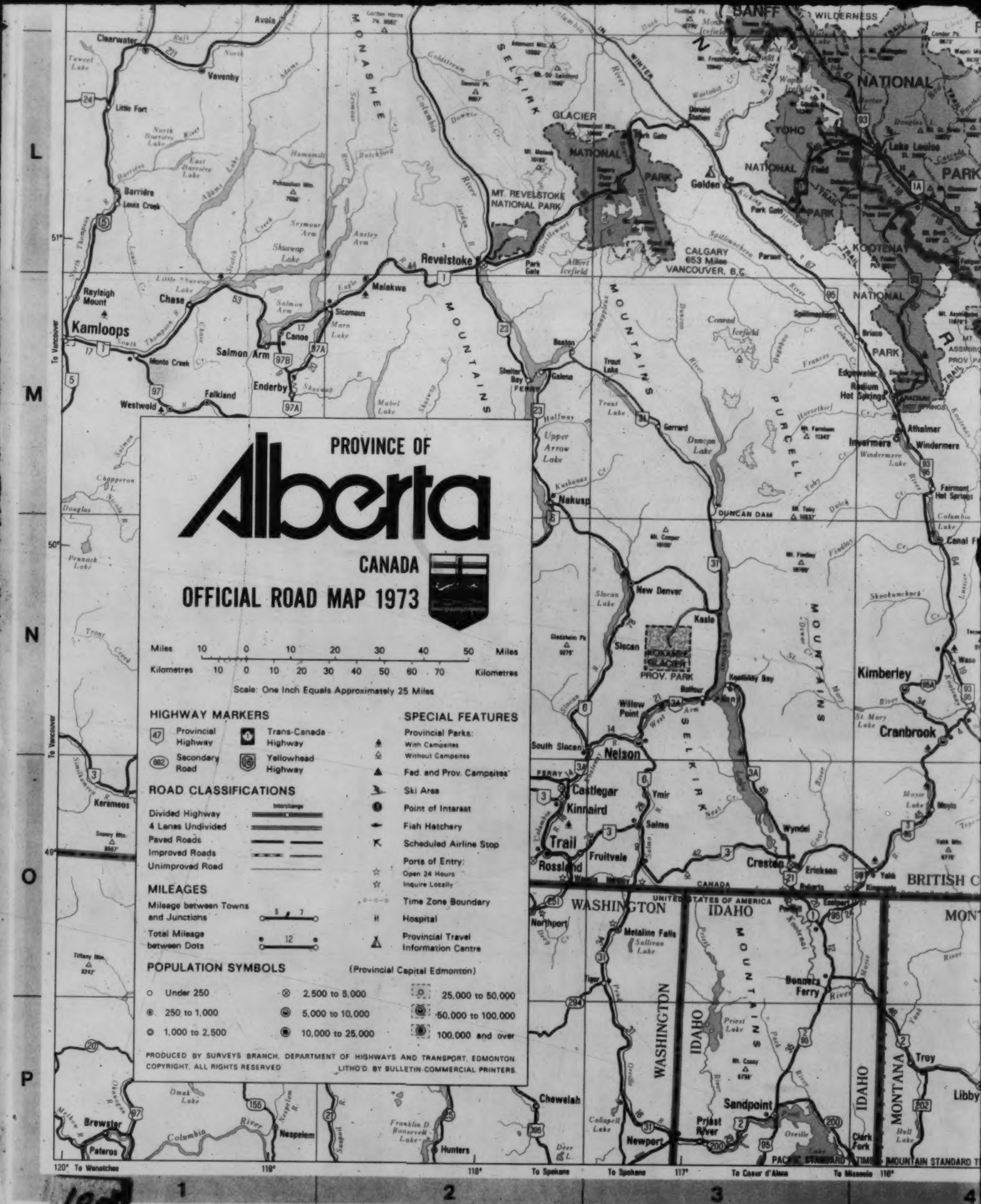
7 d


G
H
I
J
K
55°
54°
53°
52°
Grande Prairie
EL 2150'
Beaverlodge
Hythe
Sexsmith
Clairmont
Wembley
Valleyview
Little Smoky
Fox Creek
Whitecourt
SWAN
EDMONTON 368 Miles DAWSON CREEK, B.C.
FORESTRY TRUNK ROAD
CONTINENTAL DIVIDE
Grande Cache
Muskeg River
WILLMORE WILDERNESS PROV. PARK
To Prince George
McBride
Hinton
Edson
Robb
Cadomin
JASPER NATIONAL PARK
Jasper
Mt. Robson 12,972' Highest Point in the Canadian Rockies
MT. ROBSON PROV. PARK
Tête Jaune Cache
Valemount
Albreda
Blue River
Avola
Clearwater
Vavenby
Little Fort
EDMONTON 770 Miles VANCOUVER, B.C.
WELLS GRAY PROVINCIAL PARK
HAMBER PROV. PARK
Mt. Columbia 12,294' Highest Point in Alberta
COLUMBIA ICEFIELD
WHITE GOAT WILDERNESS
SIFFLEUR WILDERNESS
BANFF NATIONAL PARK
ROCKY MOUNTAIN
Nordegg
Boat Encampment
MICA DAM
CANADA
MONASHEE
SELKIRK
GLACIER
CLOSED IN WINTER


LESSER SLAVE LAKE
LESSER SLAVE LAKE PROV. PARK
Triangle
Enilda
Joussard
Kinuso
Canyon Creek
Widewater
Driftpile
Faust
Slave Lake
New Fish Creek
Valleyview
Sunset House
Smith
Hondo
Calling Lake
Wandering River
Breynat
SWAN HILLS
Swan Hills
Chisholm Mills
Island Lake
Athabasca
Grassland
Atmore
Plamondon
Lac La Biche
Donatville
Boyle
Caslan
Little Smoky
Fox Creek
Fort Assiniboine
Neerlandia
Jarvie
Dapp
Pibroch
Rochester
Perryvale
Newbrook
Whitecourt
Blue Ridge
Barrhead
Westlock
Clyde
Thorhild
Waskatenau
Smoky Lake
Vilna
Mayerthorpe
Rochfort Bridge
Sangudo
Legal
Redwater
Andrew
Willingdon
Two Hills
Morinville
Bon Accord
Gibbons
Bruderheim
Lamont
Mundare
Vegreville
Edson
Peers
Niton Junction
Evansburg
Entwistle
Wildwood
Gunn
Onoway
Spruce Grove
St. Albert
Fort Saskatchewan
ELK ISLAND NAT'L PARK
Stony Plain
Edmonton
Sherwood Park
Tofield
Devon
Leduc
Calmar
Thorsby
Drayton Valley
Robb
Camrose
Viking
Holden
Ryley
BRAZEAU DAM
Lodgepole
Buck Lake
Wetaskiwin
Daysland
Killam
Ponoka
Rimbey
Bashaw
Forestburg
ROCKY
WHITE GOAT WILDERNESS
Nordegg
CRIMSON LAKE PROV PARK
Rocky Mountain House
Eckville
Bentley
Lacombe
Blackfalds
Stettler
Castor
MOUNTAINS
Sylvan Lake
Red Deer
Innisfail
Caroline
Bowden
Big Valley
BANFF
SIFFLEUR WILDERNESS
FOREST
Sundre
Olds
Trochu
Three Hills
Didsbury
Carstairs
Hanna
NATIONAL
YOHO
RESERVE
Lake Louise
Crossfield
Acme
Drumheller
Delia

8 of


G
H
I
J
K
9 of
55°
54°
53°
52°
PRIMROSE LAKE
AIR WEAPONS RANGE
MEADOW LAKE PROVINCIAL PARK
Primrose Lake
Cold Lake
Calling Lake
Smith
Hondo
Wandering River
Breynat
Philomena
Imperial Mills
Owl River
Plamondon
Sir Winston Churchill Prov. Park
Lac La Biche
Grassland
Atmore
Big Coulee
Island Lake
Athabasca
Colinton
Boyle
Donatville
Venice
Hylo
Caslan
Rich Lake
La Corey
Iron River
Medley
Grand Centre
Cold Lake
Fort Kent
Ardmore
Beaver Crossing
Cherry Grove
Pierceland
Goodsoil
Jarvie
Perryvale
Rochester
Newbrook
Alpen Siding
Ellscott
Long Lake Prov. Park
Kikino
Goodfish Lake
Fork Lake
McRae
Goodridge
St. Lina
Glendon
Francis
Moose Lake Prov. Park
Bonnyville
Beaverdam
Pibroch
Tawatinaw
Nestow
Thorhild
Abee
Weasel Creek
Sprucefield
Garner Lake Prov. Park
Edwand
Bellis
Mallaig
Therien
Ashmont
St. Vincent
Westlock
Pickardville
Clyde
Vimy
Waugh
Legal
Waskatenau
Warspite
Smoky Lake
Vilna
Spedden
Owlseye
St. Paul
Egremont
Opal
Radway
Hamlin
St. Brides
Lindbergh
Cushing Lake
Frog Lake
Morinville
Bon Accord
Gibbons
Redwater
Andrew
Whitford
Saddle Lake
Lafond
Elk Point
Frog Lake
Onion Lake
Tulliby Lake
Frenchman Butte
St. Michael
Star
Willingdon
Brosseau
Duvernay
Musidora
Myrnam
Heinsburg
Bruderheim
Lamont
Chipman
Hilliard
Two Hills
Beauvallon
Derwent
Dewberry
Fort Saskatchewan
Elk Island Nat'l Park
Mundare
Warwick
St. Albert
Spruce Grove
Stony Plain
Edmonton EL. 2190'
Sherwood Park
Ardrossan
Vegreville
Lavoy
Ranfurly
Innisfree
Mannville
Vermilion
Vermilion Prov. Park
Islay
Kitscoty
Lloydminster EL. 2130'
Marwayne
Paradise Hill
Streamstown
Devon
Leduc
Calmar
Tofield
Beaverhill Lake
Miquelon Lake Prov. Park
Kingman
Ryley
Holden
Minburn
Edmonton 324 Miles Saskatoon, Sask.
Kenilworth Lake
Blackfoot
Marshall
Lashburn
Waseca
Hay Lakes
Armena
Camrose EL. 2427'
Round Hill
Bruce
Viking
Kinsella
Tolland
Paradise Valley
Rivercourse
McLaughlin
Millet
Wetaskiwin EL. 2480'
Bittern Lake
Ohaton
Bawlf
Daysland
Irma
Fabyan
Wainwright
Edgerton
Marsden
Neilburg
Manito Lake
New Norway
Kelsey
Strome
Killam
Sedgewick
Lougheed
Hardisty
Ribstone
Chauvin
Dillberry Lake Prov. Park
Ponoka
Bashaw
Heisler
Forestburg
Galahad
Alliance
Hughenden
Amisk
Czar
Metiskow
Provost
Macklin
Evesham
Lacombe
Blackfalds
Alix
Mirror
Nevis
Stettler
Botha
Halkirk
Castor
Brownfield
Talbot
Cadogan
Primate
Denzil
Sylvan Lake
Red Deer EL. 2820'
Delburne
Gadsby
Fleet
Coronation
Throne
Veteran
Consort
Monitor
Kirriemuir
Altario
Compeer
Major
Bodo
Gooseberry Lake Prov. Park
Sounding Lake
Sullivan Lake
Innisfail
Penhold
Bowden
Big Valley
Byemoor
Endiang
Scapa
Spondin
Hemaruka
New Brigden
Esther
Loverna
Olds
Trochu
Three Hills
Torrington
Huxley
Elnora
Rumsey
Morrin
Munson
Drumheller EL. 2280'
Delia
Hanna
Craigmyle
Youngstown
Scotfield
Chinook
Cereal
Sibbald
Alsask
Marengo
Flaxcombe
Coronation
To Saskatoon
To Saskatoon



Clearwater
Vavenby
Avola
Little Fort
Barrière
Louis Creek
Kamloops
Rayleigh Mount
Chase
Salmon Arm
Canoe
Sicamous
Malakwa
Enderby
Monte Creek
Falkland
Westwold
Revelstoke
MONASHEE
SELKIRK
MOUNTAINS
GLACIER NATIONAL PARK
MT. REVELSTOKE NATIONAL PARK
Golden
Donald Station
BANFF
NATIONAL
YOHO NATIONAL PARK
Field
Lake Louise
KOOTENAY NATIONAL PARK
CALGARY 653 Miles VANCOUVER, B.C.
Parson
Spillimacheen
Brisco
Edgewater
Radium Hot Springs
Athalmer
Invermere
Windermere
Fairmont Hot Springs
Canal Flats
PURCELL MOUNTAINS
DUNCAN DAM
Beaton
Trout Lake
Gerrard
Galena
Shelter Bay
FERRY
Upper Arrow Lake
Nakusp
New Denver
Slocan
Kaslo
KOKANEE GLACIER PROV. PARK
Kootenay Bay
Balfour
Willow Point
South Slocan
Nelson
Castlegar
Kinnaird
Trail
Rossland
Fruitvale
Ymir
Salmo
Creston
Wyndel
Erickson
Kimberley
Cranbrook
Wasa
Moyie
Yahk
Kingsgate
Keremeos
BRITISH C
CANADA
UNITED STATES OF AMERICA
WASHINGTON
IDAHO
MONTANA
Northport
Metaline Falls
Colville
Chewelah
Newport
Priest River
Sandpoint
Bonners Ferry
Eastport
Porthill
Troy
Libby
Clark Fork
Brewster
Pateros
Nespelem
Hunters
Omak Lake
Franklin D. Roosevelt Lake
Priest Lake
PACIFIC STANDARD TIME
MOUNTAIN STANDARD T
To Vancouver
To Wenatchee
To Spokane
To Coeur d'Alene
To Missoula
120°
119°
118°
117°
116°
51°
50°
49°
L
M
N
O
P
1
2
3
4

PROVINCE OF

Alberta

CANADA

OFFICIAL ROAD MAP 1973

Miles 10 0 10 20 30 40 50 Miles

Kilometres 10 0 10 20 30 40 50 60 70 Kilometres

Scale: One Inch Equals Approximately 25 Miles

HIGHWAY MARKERS

- 47 Provincial Highway
- 1 Trans-Canada Highway
- 862 Secondary Road
- 16 Yellowhead Highway

ROAD CLASSIFICATIONS

- Divided Highway (Interchange)
- 4 Lanes Undivided
- Paved Roads
- Improved Roads
- Unimproved Road

MILEAGES

- Mileage between Towns and Junctions — 5 7
- Total Mileage between Dots — 12

SPECIAL FEATURES

Provincial Parks:
- With Campsites
- Without Campsites

- Fed. and Prov. Campsites
- Ski Area
- Point of Interest
- Fish Hatchery
- Scheduled Airline Stop

Ports of Entry:
- ☆ Open 24 Hours
- ☆ Inquire Locally

- Time Zone Boundary
- Hospital
- Provincial Travel Information Centre

POPULATION SYMBOLS

(Provincial Capital Edmonton)

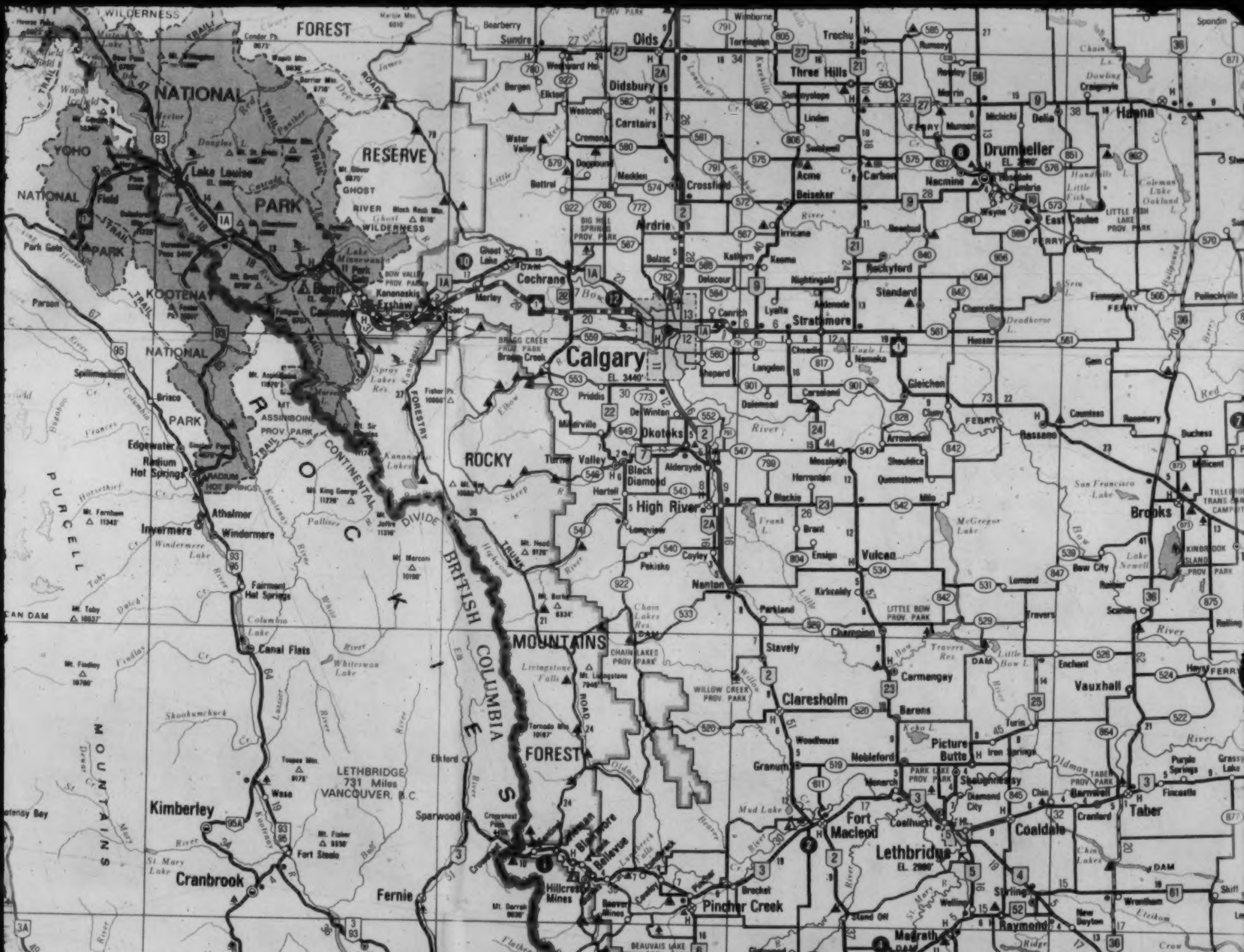
○ Under 250	⊗ 2,500 to 5,000	25,000 to 50,000
● 250 to 1,000	● 5,000 to 10,000	50,000 to 100,000
● 1,000 to 2,500	● 10,000 to 25,000	100,000 and over

PRODUCED BY SURVEYS BRANCH, DEPARTMENT OF HIGHWAYS AND TRANSPORT, EDMONTON

COPYRIGHT, ALL RIGHTS RESERVED

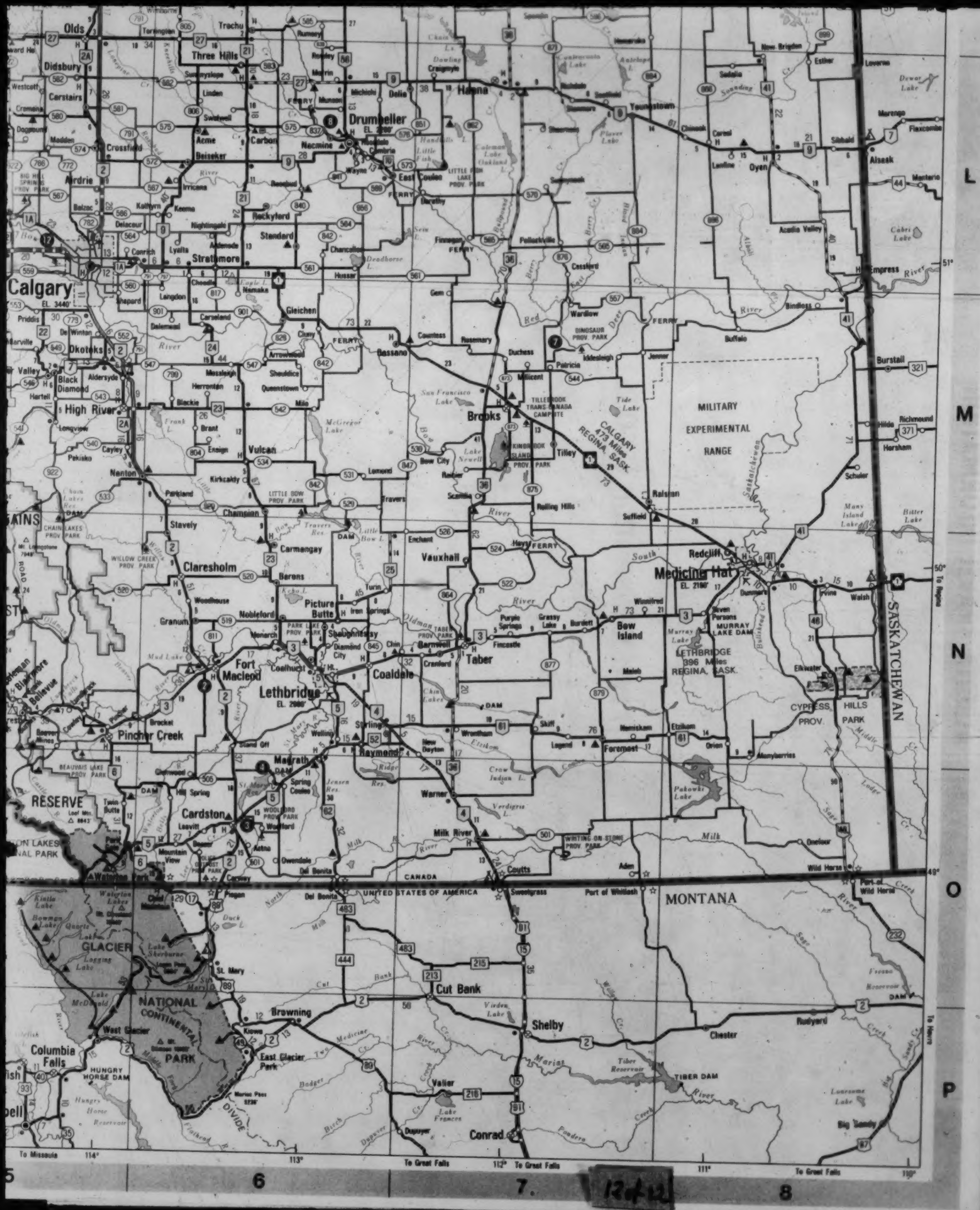
LITHO'D. BY BULLETIN-COMMERCIAL PRINTERS

10



BANFF NATIONAL PARK
FOREST RESERVE
YOHO NATIONAL PARK
KOOTENAY NATIONAL PARK
ROCKY MOUNTAINS
PURCELL MOUNTAINS
CONTINENTAL DIVIDE
BRITISH COLUMBIA
MONTANA
IDAHO
MACDONALD RANGE
WATERTON LAKES NATIONAL PARK
GLACIER NATIONAL PARK
WATERTON LAKES AND GLACIER NATIONAL PARKS ARE KNOWN AS THE WATERTON - GLACIER INTERNATIONAL PEACE PARK
LETHBRIDGE 731 Miles VANCOUVER, B.C.
Calgary EL. 3440'
Lethbridge EL. 2980'
Drumheller
Olds
Three Hills
Didsbury
Carstairs
Airdrie
Cochrane
Banff
Canmore
Lake Louise
Strathmore
Okotoks
High River
Vulcan
Nanton
Claresholm
Fort Macleod
Pincher Creek
Cardston
Raymond
Taber
Brooks
Coaldale
Kimberley
Cranbrook
Fernie
Invermere
Radium Hot Springs
Creston
Bonners Ferry
Libby
Troy
Eureka
Whitefish
Columbia Falls
Kalispell
Browning
Cut Bank
Shelby
Conrad
CANADA
UNITED STATES OF AMERICA
PACIFIC STANDARD TIME
MOUNTAIN STANDARD TIME
To Missoula
To Great Falls
116°
115°
114°
113°
112°
4
5
6
7

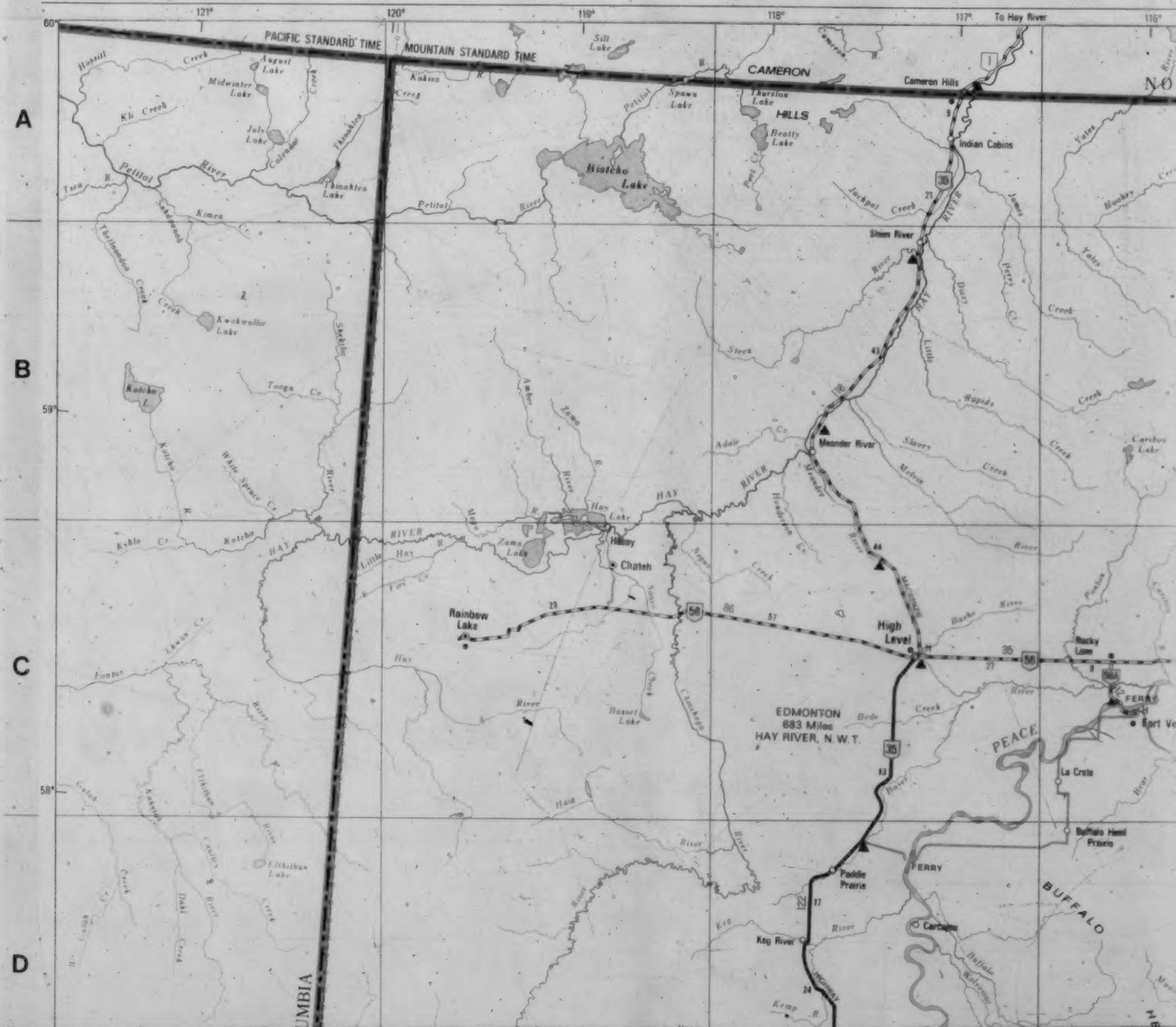
11c4


Olds
Three Hills
Trochu
Didsbury
Carstairs
Drumheller
EL. 2260'
Hanna
Youngstown
Airdrie
Crossfield
Acme
Beiseker
Carbon
Strathmore
Calgary
EL. 3440'
Okotoks
High River
Black Diamond
Gleichen
Bassano
Brooks
Tilley
Empress
Burstall
Vulcan
Nanton
Claresholm
Stavely
Carmangay
Vauxhall
Redcliff
Medicine Hat
EL. 2180'
MILITARY EXPERIMENTAL RANGE
CALGARY 473 Miles REGINA, SASK.
LETHBRIDGE 396 Miles REGINA, SASK.
DINOSAUR PROV. PARK
LITTLE BOW PROV. PARK
WILLOW CREEK PROV. PARK
CHAIN LAKES PROV. PARK
Picture Butte
Fort Macleod
Lethbridge
EL. 2980'
Coaldale
Taber
Bow Island
Pincher Creek
Magrath
Raymond
Cardston
Milk River
Coutts
Foremost
Pakowki Lake
CYPRESS HILLS PROV. PARK
Elkwater
SASKATCHEWAN
WRITING ON STONE PROV. PARK
RESERVE
Waterton Park
CANADA
UNITED STATES OF AMERICA
MONTANA
GLACIER NATIONAL PARK
CONTINENTAL DIVIDE
St. Mary
Browning
Cut Bank
Shelby
Chester
Rudyard
East Glacier Park
West Glacier
Columbia Falls
HUNGRY HORSE DAM
Valier
Conrad
TIBER DAM
Big Sandy
Sweetgrass
To Missoula
To Great Falls
To Regina
To Havre
114°
113°
112°
111°
110°
51°
50°
49°
L
M
N
O
P
6
7
8

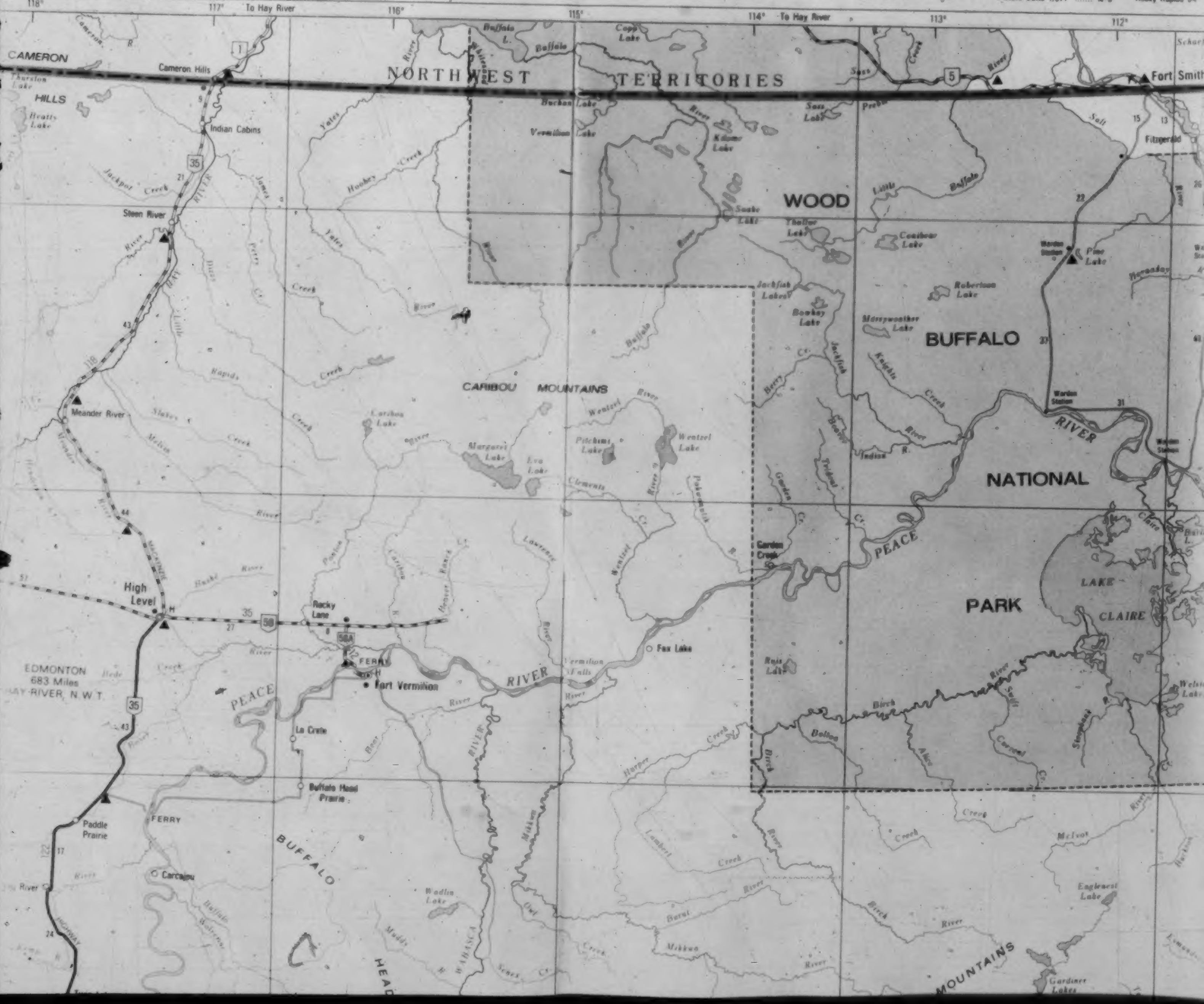
12 of 12

INDEX TO PLACE NAMES IN ALBERTA

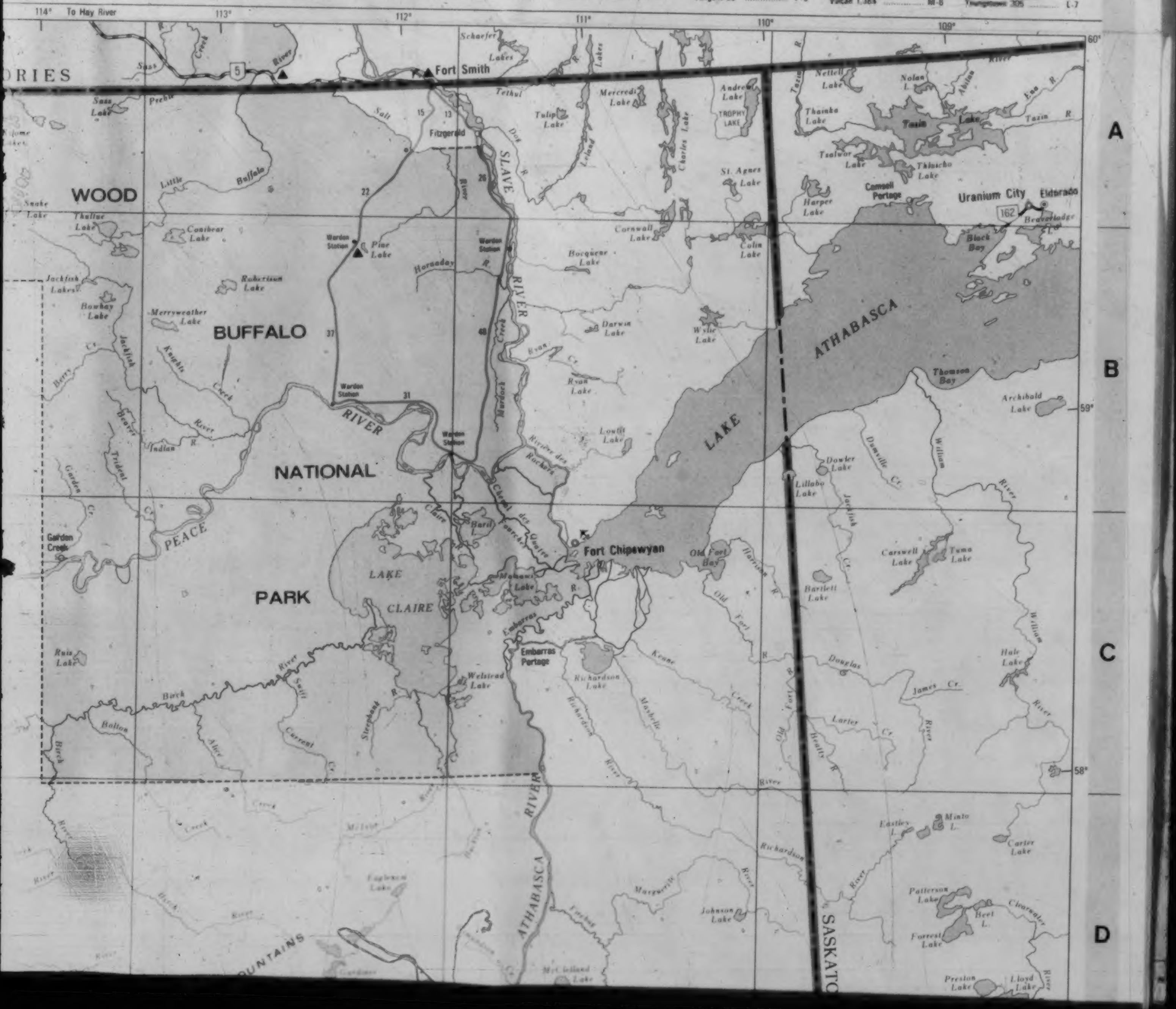
Abee	H-6
Acadia Valley 166	L-8
Acme 300	L-6
Aden	O-7
Aetna	O-6
Airdrie 1,200	L-5
Alberta Beach 320	I-5
Alcomdale	I-5
Alsurve	I-8
Alder Flats 133	J-5
Aldersyde 88	M-5
Alhambra	K-5
Alix 582	K-6
Alliance 230	K-7
Alpen Siding	H-6
Alsike	J-5
Altario 64	K-8
Amisk 136	J-7
Andrew 466	I-6
Anzac 114	F-7
Ardenode	L-6
Ardmore 230	H-8
Ardrossan 137	I-6
Armena 55	J-6
Arrowwood 156	M-6
Ashmont 150	H-7
Aspen Beach (see Gull L.)	K-5
Athabasca 1,831	H-6
Atikameg 117	F-4
Atmore	H-6
Balzac	L-5
Banff 3,208	L-4
Barnwell 341	N-7
Barons 241	N-6
Barrhead 2,803	I-5
Bashaw 777	J-6
Bassano 861	M-6
Battle Bend	K-7
Bawlf 193	J-6
Bay Tree	F-1
Beach Corner	I-5
Bearberry	K-5
Bear Canyon	F-1
Beaumont 337	J-6
Beauvallon 57	I-7
Beaver Crossing	H-8
Beaverdam	H-8
Beaverlodge 1,245	G-1
Beaver Mines	N-5
Beazer	O-6
Beiseker 414	L-6
Bellevue 1,242	N-5
Bellis 90	H-7
Benalto 94	K-5
Bentley 621	K-5
Bergen	L-5
Berrymoor	J-5
Berwyn 470	F-3
Bezanson 54	G-2
Big Coulee	H-6
Big Valley 306	K-6
Bindloss	M-8
Bittern Lake 80	J-6
Black Diamond 1,069	M-5
Blackfalds 904	K-5
Blackfoot 175	I-8
Blackie 189	M-6
Blairmore 2,037	N-5
Bloomsbury	H-5
Blueberry Mountain	F-2
Blue Ridge 239	I-4
Bluesky 124	F-2
Bluffton 98	J-5
Bodo	K-8
Bon Accord 398	I-6
Bonanza	F-1
Bonnyville 2,588	H-7
Botha 99	K-6
Bottrel	L-5
Bow City	M-7
Bowden 563	K-5
Bow Island 1,160	N-7
Boyle 518	H-6
Boyne Lake	H-7
Bragg Creek 203	M-5
Brant	M-6
Breton 352	J-5
Breynat	G-6
Brocket	N-6
Brooks 4,177	M-7
Brosseau	I-7
Brownfield	K-7
Brownvale 161	F-3
Bruce 110	J-7
Bruderheim 361	I-6
Brûlé 104	J-2
Buck Creek	J-5
Buck Lake 159	J-5
Buffalo	M-8
Buffalo Head Prairie	D-4
Buffalo Lake	G-2
Buford	J-5
Burdett 206	N-7
Burmis	N-5
Busby 65	I-5
Butte	K-5
Byemoor 60	K-7
Cadogan 90	K-8
Cadomin 109	J-3
Cadotte Lake 192	F-4
Calahoo 62	I-5
Calais	G-3
Calgary 424,787	L-5 M-5
Calling Lake	G-6
Calmar 845	J-5
Cambria	L-6
Camp Creek	H-5
Camrose 9,006	J-6
Canmore 1,538	L-4
Canyon Creek 205	G-4
Carbon 403	L-6
Carcajou	D-3
Cardston 2,685	O-6
Carmangay 230	N-6
Carnwood	J-5
Caroline 386	K-5
Carrot Creek	I-4
Carseland 105	M-6
Carstairs 910	L-5
Carway	O-6
Caslan 117	H-6
Castor 1,166	K-7
Cayley 122	M-5
Cereal 219	L-8
Cessford	L-7
Champion 335	M-6
Chancellor	L-6
Chard	F-7
Chateh	C-2
Chauvin 349	J-8
Cheadle	L-6
Cherhill 62	I-5
Cherry Grove 76	H-8
Cherry Point	F-1
Chief Mountain	O-6
Chigwell	K-6
Chin	N-6
Chinook 59	L-8
Chinook Valley	F-3
Chipewyan Lake 118	E-6
Chipman 193	I-6
Chisholm Mills 88	H-5
Clairmont 309	G-2
Clandonald 119	I-8
Claresholm 3,200	N-6
Cleardale	F-1
Clear Hills	E-3
Clive 258	K-6
Cluny 92	M-6
Clyde 218	I-6
Coaldale 2,914	N-6
Coalhurst 426	N-6
Cochrane 1,101	L-5
Codesa	F-2
Cold Lake 1,309	H-8
Coleman 1,401	N-5
Colinton 125	H-6
College Heights 331	K-5
Compeer 61	K-8
Condor 62	K-5
Conklin 119	G-7
Conrich	L-5
Consort 658	K-8
Cooking Lake 196	I-6
Coronado	I-6
Coronation 1,137	K-7
Countess	M-7
Coutts 407	O-7
Cowley 244	N-5
Craigmyle 72	L-7
Cranford	N-7
Cremona 178	L-5
Crestomere	J-5
Crooked Creek	G-3
Crossfield 653	L-5
Crowsnest	N-5
Cynthia 82	J-4
Czar 190	K-8
Dalemead	M-6
Dapp 62	H-5
Darwell	I-5
Daysland 593	J-7
Deadwood	E-3
Debolt 79	G-2
Delacour	L-5
Del Bonita	O-6
Delburne 383	K-6
Delia 241	L-6
Demmitt	G-1
Derwent 203	I-7
Desmarais 258	F-5
Deville	I-6
Devon 1,502	J-5
Dewberry 160	I-8
De Winton 53	M-5
Diamond City 86	N-6
Dickson	K-5
Didsbury 1,911	L-5
Dixonville 113	E-3
Dogpound	L-5
Donalda 232	J-6
Donatville	H-6
Donnelly 292	F-3
Dorothy	L-7
Drayton Valley 3,954	J-5
Driftpile	G-4
Drumheller 5,888	L-6
Duchess 250	M-7
Duffield 63	I-5
Dunmore 64	N-8
Dunstable	I-5
Dunvegan	F-2
Duverney 52	I-7
Eaglesham 218	F-3
East Coulee 312	L-6
Eckville 727	K-5
Edberg 145	J-6
Edgerton 296	J-8
Edmonton 441,530	I-6
Edmonton Beach 148	I-5
Edson 4,095	I-3
Edwand	H-6
Egremont 92	I-6
Elk Point 782	I-7
Elkton	L-5
Elkwater 98	N-8
Ellerslie	I-6
Ellscott	H-6
Elmworth	G-1
Elnora 226	K-6
Embarras Portage	C-7
Empress 266	L-8
Enchant 54	N-7
Endiang	K-7
Enilda 201	G-4
Ensign	M-6
Entrance 72	I-3
Entwistle 373	I-5
Erskine 233	K-6
Esther	L-8
Etzikom 92	N-8
Eureka River	F-2
Evansburg 546	I-4
Exshaw 548	L-4
Fabyan 80	J-7
Fairview 2,350	F-2
Falher 918	F-3
Fallis	I-5
Falun	J-5
Faust 353	G-4
Fawcett 141	H-5
Fawcett Lake	G-5
Fenn	K-6
Ferintosh 127	J-6
Finnegan	L-7
Fisher Home	J-5
Fitzgerald	A-7
Flatbush 70	H-5
Fleet	K-7
Foisy	I-7
Foremost 568	N-7
Forestburg 747	J-7
Fork Lake	H-7
Fort Assiniboine 180	H-5
Fort Chipewyan 1,122	C-7
Fort Kent 113	H-8
Fort MacKay 200	E-7
Fort Macleod 2,715	N-6
Fort McMurray 8,148	E-7
Fort Saskatchewan 6,756	I-6
Fort Vermilion 740	C-4
Fox Creek 1,517	H-3
Fox Lake	C-5
Franchere	H-7
Frank 224	N-5
Freedom	I-5
Frog Lake	I-8
Gadsby	K-6
Gainford	I-5
Galahad 179	K-7
Garden Creek 134	C-5
Gem	M-7
Genesee	J-5
Ghost Lake	L-5
Gibbons 723	I-6
Gift Lake 379	F-4
Girouxville 347	F-3
Gleichen 367	
Glendon 354	
Glenevis	
Glenwood 200	
Goodfare	
Goodfish Lake	
Goodridge	
Gordondale	
Granada (P.O. Northville)	
Grand Centre 2,600	
Grande Cache 3,580	
Grande Prairie 14,739	
Granum 324	
Grassland 66	
Grassy Lake 196	
Green Court 51	
Grimshaw 1,747	
Grouard 320	
Grovedale	
Gull Lake (P.O. Aspen Beach) 57	
Gunn 59	
Gurneyville	
Guy 63	
Gwynne 70	
Habay	
Haddock	
Haight	
Hairy Hill 99	
Halkirk 136	
Hamlin	
Hanna 2,545	
Hardisty 601	
Hartell	
Hay Lakes 202	
Haynes	
Hays 67	
Hayter	
Hazeldine	
Heath	
Heinsburg 100	
Heisler 199	
Hemaruka	


121°
120°
119°
118°
117°
To Hay River
116°
60°
59°
58°
A
B
C
D
PACIFIC STANDARD TIME
MOUNTAIN STANDARD TIME
CAMERON
HILLS
Cameron Hills
Hossitt Creek
August Lake
Midwinter Lake
Kli Creek
July Lake
Thinahtea Lake
Petitot River
Tsea R.
Kimea Cr.
Silt Lake
Kakisa R.
Spawn Lake
Thurston Lake
Beatty Lake
Bistcho Lake
Jackpot Creek
Indian Cabins
Steen River
HAY RIVER
Kwokullie Lake
Kotcho L.
Tooga Cr.
Amber
Zama
Adair Cr.
Meander River
Slavey Creek
Rapids
Caribou Lake
Hay Lake
Habay
Chateh
Zama Lake
Rainbow Lake
High Level
Rocky Lane
FERRY
Fort Vermilion
EDMONTON
683 Miles
HAY RIVER, N.W.T.
PEACE
La Crete
Buffalo Head Prairie
Basset Lake
Chinchaga
Paddle Prairie
FERRY
Carcajou
Keg River
Kemp R.
BUFFALO
UMBIA
1
35
58
122

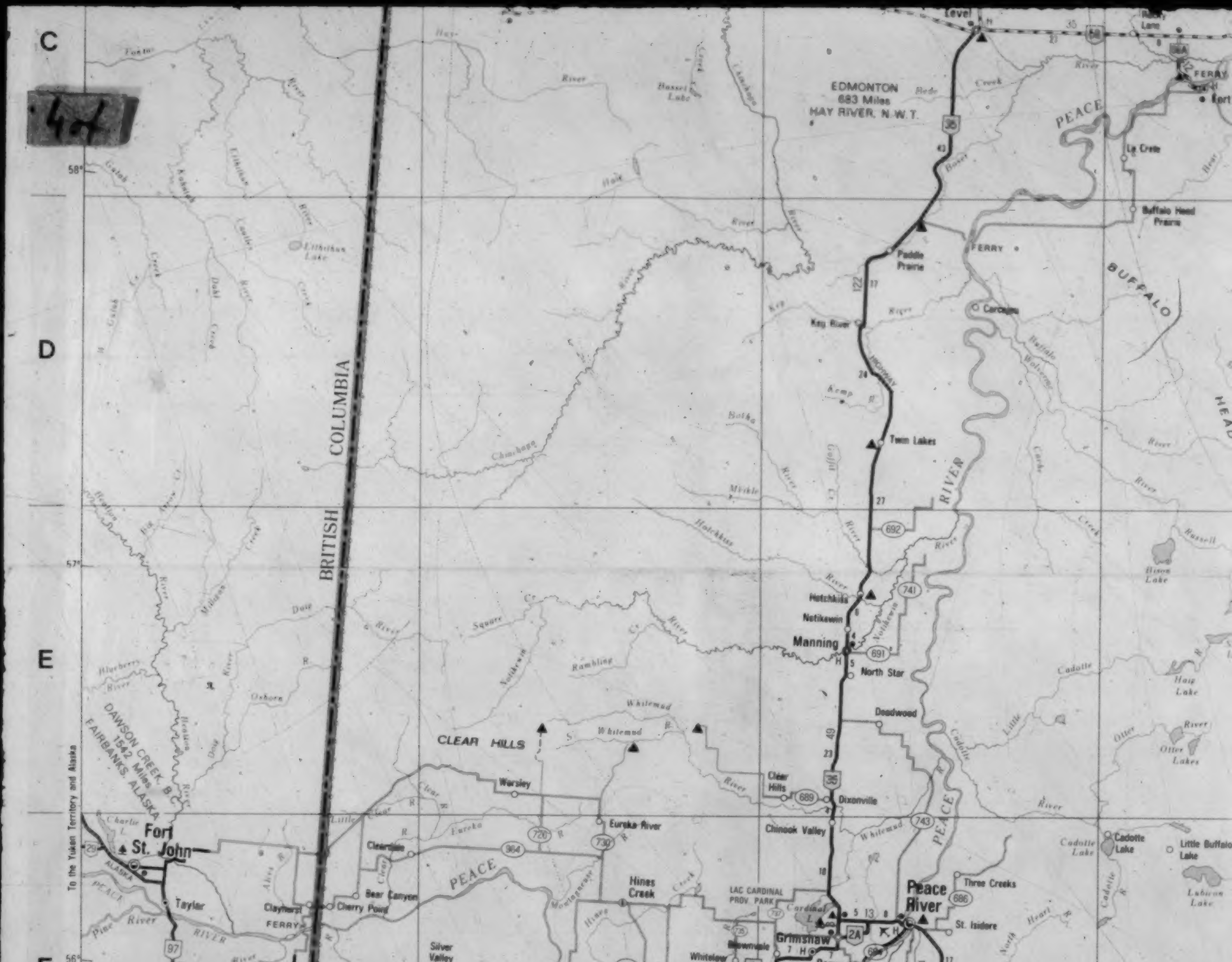
Dorothy	L-7
Drayton Valley 3,954	J-5
Driftpile	G-4
Drumheller 5,888	L-6
Duchess 250	M-7
Duffield 63	I-5
Dunmore 64	N-8
Dunstable	I-5
Dunvegan	F-2
Duvernay 52	I-7
Eaglesham 218	F-3
East Coulee 312	L-6
Eckville 727	K-5
Edberg 145	J-6
Edgerton 298	J-8
Edmonton 441,530	I-6
Edmonton Beach 148	I-5
Edson 4,095	I-3
Edwand	H-6
Egremont 92	I-6
Elk Point 782	I-7
Elkton	L-5
Elkwater 98	N-8
Ellerslie	I-6
Ellscott	H-6
Elmworth	G-1
Elnora 226	K-6
Embarras Portage	C-7
Empress 266	L-8
Enchant 54	N-7
Endiang	K-7
Enilda 201	G-4
Ensign	M-6
Entrance 72	I-3
Entwistle 373	I-5
Erskine 233	K-6
Esther	L-8
Etzikom 92	N-8
Eureka River	F-2
Evansburg 546	I-4
Exshaw 548	L-4
Fabyan 80	J-7
Fairview 2,359	F-2
Falher 918	F-3
Fallis	I-5
Falun	J-5
Faust 353	G-4
Fawcett 141	H-5
Fawcett Lake	G-5
Fenn	K-6
Ferintosh 127	J-6
Finnegan	L-7
Fisher Home	I-5
Fitzgerald	A-7
Flatbush 70	H-5
Fleet	K-7
Foisy	I-7
Foremost 568	N-7
Forestburg 747	J-7
Fork Lake	H-7
Fort Assiniboine 180	H-5
Fort Chipewyan 1,122	C-7
Fort Kent 113	H-8
Fort MacKay 200	E-7
Fort Macleod 2,715	N-6
Fort McMurray 8,148	E-7
Fort Saskatchewan 6,756	I-6
Fort Vermilion 740	C-4
Fox Creek 1,517	H-3
Fox Lake	C-5
Franchere	H-7
Frank 224	N-5
Freedom	I-5
Frog Lake	I-8
Gadsby	K-6
Gainford	I-5
Galahad 179	K-7
Garden Creek 134	C-5
Gem	M-7
Genesee	J-5
Ghost Lake	L-5
Gibbons 723	I-6
Gift Lake 379	F-4
Girouxville 347	F-3
Gleichen 357	M-6
Glendon 264	H-7
Glenevis	I-5
Glenwood 200	O-6
Goodfare	G-1
Goodfish Lake	H-7
Goodridge	H-7
Gordondale	F-1
Granada (P.O. Northville)	I-4
Grand Centre 2,600	H-8
Grande Cache 3,580	I-2
Grande Prairie 14,739	G-2
Granum 324	N-6
Grassland 66	H-6
Grassy Lake 186	N-7
Green Court 51	I-4
Grimshaw 1,747	F-3
Grouard 328	G-4
Grovedale	G-2
Gull Lake (P.O. Aspen Beach) 187	K-5
Gunn 50	I-5
Gurneyville	H-7
Guy 63	G-3
Gwynne 70	J-6
Habay	C-2
Haddock	I-4
Haight	J-6
Hairy Hill 99	I-7
Halkirk 136	K-7
Hamlin	I-7
Hanna 2,545	L-7
Hardisty 601	J-7
Hartell	M-5
Hay Lakes 202	J-6
Haynes	K-6
Hays 67	N-7
Hayter	K-8
Hazeldine	I-8
Heath	J-8
Heinsburg 100	I-8
Heisler 180	J-7
Hemaruka	K-7
Herronton	M-6
Hespero	K-5
High Level 1,621	C-3
High Prairie 2,898	G-3
Highridge	I-5
High River 2,792	M-5
Highvale	I-5
Hilda 82	M-8
Hillcrest Mines 613	N-5
Hilliard 64	I-6
Hill Spring 213	O-6
Hines Creek 521	F-2
Hinton 5,326	I-3
Hoadley	J-5
Hobbema 51	J-6
Holden 448	J-7
Hondo	G-5
Hoselaw	H-7
Hotchkiss	E-3
Hoadley	G-2
Hughenden 256	K-7
Hussar 180	L-6
Huxley 80	K-6
Hylo	H-6
Hythe 526	G-1
Iddesleigh	M-7
Imperial Mills 118	G-7
Indian Cabins	A-3
Innisfail 2,470	K-5
Innisfree 262	I-7
Irma 423	J-7
Iron River	H-7
Iron Springs 59	N-6
Irricana 127	L-6
Irvine 201	N-8
Island Lake	H-6
Islay 94	I-8
Itaska Beach	J-5
James River Bridge	K-5
Jarvie 104	H-5
Jasper 2,822	J-2
Jean Côté 58	F-3
Jenner	M-7
Josephburg 167	I-6
Joussard 269	G-4
Kananaskis 73	L-4
Kapasiwin	I-5
Kathleen	G-3
Kathyrn	L-6
Kavanagh 54	J-6
Keephills	I-5
Keg River 69	D-3
Kelsey	J-6
Keoma	L-6
Kikino 202	H-7
Killam 867	J-7
Kingman 81	J-6
Kinsella 81	J-7
Kinuso 287	G-4
Kirkcaldy	M-6
Kirriemuir	K-8
Kitscoty 329	I-8
Lac La Biche 1,743	H-7
Lac la Nonne	I-5
Lacombe 3,436	K-6
La Corey	H-7
La Crete	C-4
Lafond	I-7
La Glace 92	G-2
Lake Isle	I-5
Lake Louise 121	L-4
Lamont 898	I-6
Lanfine	L-8
Langdon 109	M-6
Lavoy 121	I-7
Leavitt	O-6
Leduc 5,271	J-6
Leedale	K-5
Legal 683	I-6
Legend	N-7
Leslieville 158	K-5
Lethbridge 42,816	N-6
Linaria	H-5
Lindale	J-5
Lindbergh 50	I-8
Lindbrook	I-6
Linden 247	L-6
Lisburn	I-5
Little Buffalo Lake 165	F-4
Little Smoky 51	H-3
Lloydminster 8,691 (Alta. 4,738 - Sask. 3,953)	I-8
Lodgepole 144	J-4
Lomond 178	M-6
Lone Pine	H-4
Longview 182	M-5
Looma	J-6
Loon Lake 136	E-4
Lougheed 217	J-7
Lousana	K-6
Lundbreck 113	N-5
Lyalta	L-6
Lymburn	G-1
MacKay	I-4
Madden	L-5
Magrath 1,226	O-6
Maleb	N-7
Mallaig 190	H-7
Ma-Me-O Beach 89	J-5
Manning 1,204	E-3
Mannville 646	I-7
Manola 51	I-5
Manyberries 81	N-8
Margie	G-7
Mariana Lake	F-7
Marie-Reine 83	F-3
Markerville	K-5
Marlboro 156	I-3
Marwayne 351	I-8
Mayerthorpe 1,036	I-4
McLaughlin 58	J-8
McLennan 1,090	G-3
McRae	H-7
Meadowview	I-5
Meander River 233	B-3
Meanook	H-6
Mearns	I-5
Medicine Hat 27,430	N-8
Medley 5,449	H-8
Meeting Creek	J-6
Menaik	J-6
Metiskow 86	K-8
Michichi	L-6
Michigan Centre	J-5
Milk River 775	O-7
Millarville	M-5
Millet 583	J-6
Millicent	M-7
Milo 117	M-6
Minburn 118	J-7
Mirror 365	K-6
Mission Beach	J-5
Monarch 102	N-6
Monitor 81	K-8
Morecambe	I-7
Morinville 1,483	I-6
Morley	L-5
Morningside 52	K-6
Morrin 220	L-6
Mossleigh	M-6
Mountain View 65	O-6
Mulhurst 138	J-6
Mundare 584	I-6
Munson 54	L-6
Musidora	I-7
Muskeg River 58	I-2
Myrnam 403	I-7
Nacmine 360	L-6
Namaka	M-6
Namao	I-6
Nampa 263	F-3
Nanton 991	M-5
Neerlandia 81	H-5
Nemiskam	N-7
Nestow	H-6
Nevis	K-6
New Brigden	L-8
Newbrook 154	H-6
New Dayton 65	N-7
New Fish Creek	G-3
New Norway 238	J-6
New Sarepta 220	J-6
Nightingale	L-6
Nisku	J-6
Niton Junction 68	I-4
Nobleford 401	N-6
Nojack	I-4
Norbuck	J-5
Nordegg 96	K-4
North Cooking Lake 96	I-6
North Star 87	E-3
Northville (see Granada)	I-4
Notikewin 70	E-3
Obed	I-3
Ohaton 68	J-6
Okotoks 1,254	M-5
Olds 3,466	L-5
Onefour	O-8
Onoway 485	I-5
Opal	I-6
Orion	N-8
Owendale	O-6
Owl River	H-7
Oyen 924	L-8
Paddle Prairie 80	D-3
Paradise Valley 144	J-8
Parkland 77	M-6
Patricia	M-7
Peace River 5,071	F-3
Peerless Lake 134	E-5
Peers 120	I-4
Pekisko	M-5
Pelican Portage	F-6
Pembridge	I-5
Penhold 420	K-5
Peoria	G-2
Perryvale	H-6
Pibroch 112	H-5
Pickardville 130	I-5
Picture Butte 1,071	N-6
Pincher	
Pincher Creek 3	
Pine Lake	
Plamondon 190	
Pocahontas	
Pollockville	
Ponoka 4,414	
Priddis	
Provost 1,489	
Purple Springs	
Queenstown	
Radway 170	
Rainbow Lake 56	
Rainier	
Ralston 475	
Ranfurly 110	
Raven	
Raymond 2,156	
Redcliff 2,380	
Red Deer 28,079	
Red Earth Creek	
Redwater 1,341	
Red Willow	
Reno	
Ribstone 84	
Richdale	
Rich Lake	
Rich Valley	
Ricinus	
Rimbey 1,375	
Rivercourse	
Rivière Qui Barre	
Robb 256	
Rochester 111	
Rochfort Bridge 6	
Rochon Sands	
Rockyford 287	
Rocky Lane	
Rocky Mountain H 3,141	
Rocky Rapids 94	

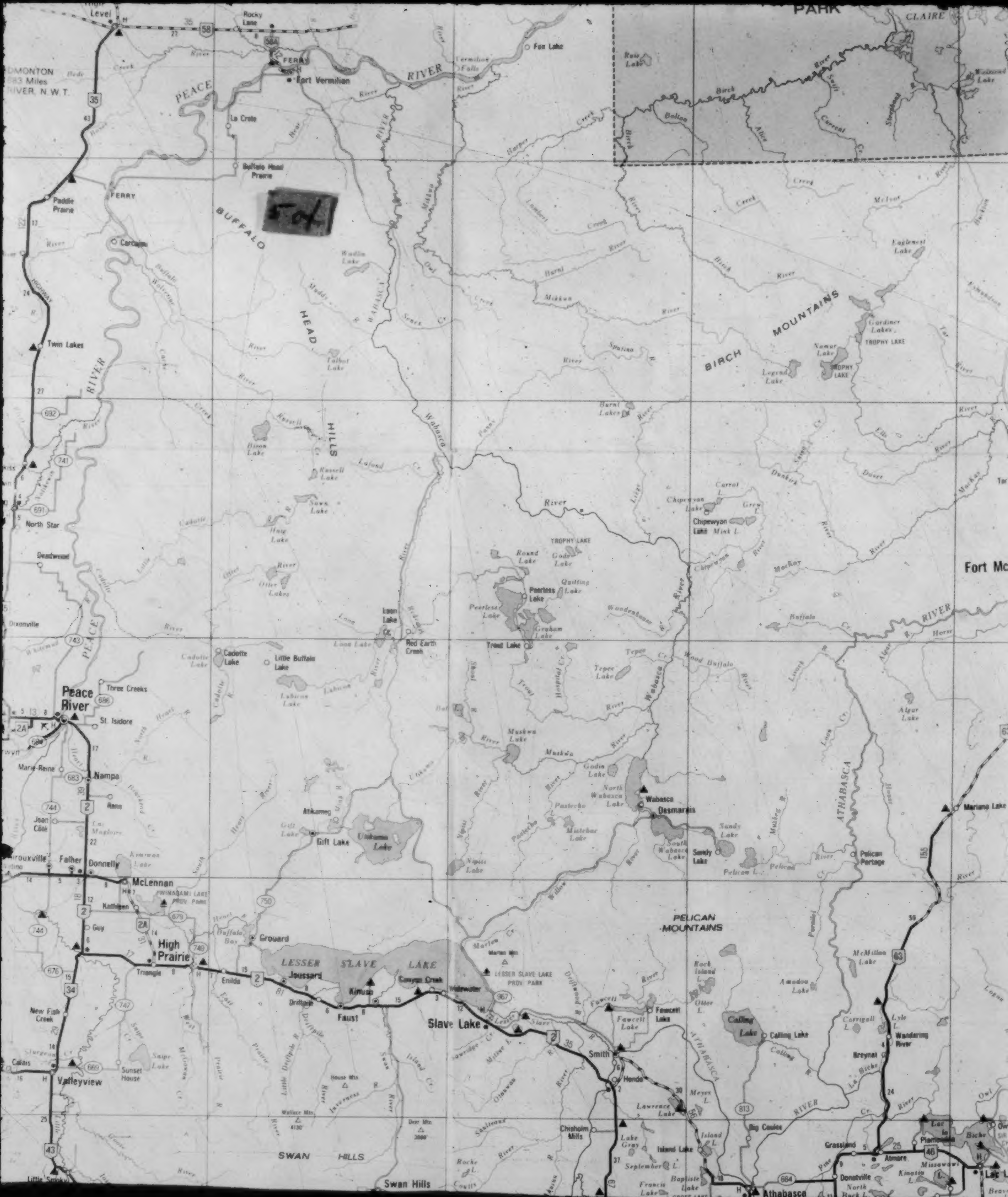

4
5
6
118°
117°
To Hay River
116°
115°
114°
To Hay River
113°
112°
CAMERON
HILLS
Cameron Hills
1
Thurston Lake
Beatty Lake
NORTHWEST
TERRITORIES
Buffalo L.
Buffalo
Copp Lake
Buchan Lake
Vermilion Lake
Sass Lake
Preble
Fort Smith
Indian Cabins
35
Jackpot Creek
Yates
Hooker Creek
Steen River
Hay River
Wood
Buffalo
Thultue Lake
Conibear Lake
Pine Lake
Warden Station
Fitzgerald
Jackfish Lake
Robertson Lake
Mercywoather Lake
Bowkey Lake
Rapids
Creek
Meander River
118
WOOD
BUFFALO
NATIONAL
PARK
CARIBOU MOUNTAINS
Caribou Lake
Margaret Lake
Eva Lake
Pitchimi Lake
Wentzel Lake
Wentzel River
Clements
Lawrence
Ponton
Boyer
Indian R.
Peace River
Garden Creek
High Level
35
58
Rocky Lane
58A
Ferry
Fort Vermilion
Fox Lake
Vermilion Falls
EDMONTON 683 Miles
HAY RIVER, N.W.T.
La Crete
Buffalo Head Prairie
Paddle Prairie
Carcajou
Ferry
BUFFALO
HEAD
Wadlin Lake
Mikkwa
Birch
Lake Claire
Athabasca
Harper Creek
Lambert
Owl
Baril
Eaglenest Lake
Gardiner Lakes
MOUNTAINS
Welstead Lake
Chenal des Quatre Fourches
Ruis Lake

Lindbergh 50	I-8
Lindbrook	I-6
Linden 247	L-6
Lisburn	I-5
Little Buffalo Lake 165	F-4
Little Smoky 51	H-3
Lloydminster 8,691 (Alta 4,738 Sask 3,953)	I-8
Lodgepole 144	J-4
Lomond 178	M-6
Lone Pine	H-4
Longview 182	M-5
Looma	J-6
Loon Lake 135	E-4
Lougheed 217	J-7
Lousana	K-6
Lundbreck 113	N-5
Lyalta	L-6
Lymburn	G-1
MacKay	I-4
Madden	L-5
Magrath 1,226	O-6
Maleb	N-7
Mallaig 190	H-7
Ma-Me-O Beach 89	J-5
Manning 1,204	E-3
Mannville 646	I-7
Manola 51	I-5
Manyberries 81	N-8
Margie	G-7
Mariana Lake	F-7
Marie Reine 83	F-3
Markerville	K-5
Marlboro 156	I-3
Marwayne 351	I-8
Mayerthorpe 1,036	I-4
McLaughlin 58	J-8
McLennan 1,090	G-3
McRae	H-7
Meadowview	I-5
Meander River 233	B-3
Meanook	H-6
Mearns	I-5
Medicine Hat 27,430	N-8
Medley 5,449	H-8
Meeting Creek	J-6
Menaik	J-6
Metiskow 66	K-8
Michichi	L-6
Michigan Centre	J-5
Milk River 775	O-7
Millarville	M-5
Millet 563	J-6
Millicent	M-7
Milo 117	M-6
Minburn 118	J-7
Mirror 365	K-6
Mission Beach	J-5
Monarch 102	N-6
Monitor 81	K-8
Morecambe	I-7
Morinville 1,483	I-6
Morley	L-5
Morningside 52	K-6
Morrin 220	L-6
Mossleigh	M-6
Mountain View 65	O-6
Mulhurst 139	J-5
Mundare 584	I-6
Munson 54	L-6
Musidora	I-7
Muskeg River 58	I-2
Myrnam 403	I-7
Nacmine 350	L-6
Namaka	M-6
Namao	I-6
Nampa 263	F-3
Nanton 991	M-5
Neerlandia 81	H-5
Nemiskam	N-7
Nestow	H-6
Nevis	K-6
New Brigden	L-8
Newbrook 154	H-6
New Dayton 65	N-7
New Fish Creek	G-3
New Norway 230	J-6
New Sarepta 220	J-6
Nightingale	L-6
Nisku	J-6
Niton Junction 68	I-4
Nobleford 401	N-6
Nojack	I-4
Norbuck	J-5
Nordegg 96	K-4
North Cooking Lake 96	I-6
North Star 87	E-3
Northville (see Granada)	I-4
Notikewin 70	E-3
Obed	I-3
Ohaton 68	J-6
Okotoks 1,254	M-5
Olds 3,466	L-5
Onefour	O-8
Onoway 485	I-5
Opal	I-6
Orion	N-8
Owendale	O-6
Owl River	H-7
Oyen 924	L-8
Paddle Prairie 80	D-3
Paradise Valley 144	J-8
Parkland 77	M-6
Patricia	M-7
Peace River 5,071	F-3
Peerless Lake 134	E-5
Peers 129	I-4
Pekisko	M-5
Pelican Portage	F-6
Pembridge	I-5
Penhold 420	K-5
Peoria	G-2
Perryvale	H-6
Pibroch 112	H-5
Pickardville 130	I-5
Picture Butte 1,071	N-6
Pincher	N-5
Pincher Creek 3,421	N-5
Pine Lake	K-6
Plamondon 190	H-6
Pocahontas	J-2
Pollockville	L-7
Ponoka 4,414	J-6
Priddis	M-5
Provost 1,489	K-8
Purple Springs	N-7
Queenstown	M-6
Radway 170	I-6
Rainbow Lake 563	C-2
Rainier	M-7
Ralston 475	M-7
Ranfurly 110	I-7
Raven	K-5
Raymond 2,156	N-6
Redcliff 2,380	N-8
Red Deer 2[illegible]79	K-5
Red Earth [illegible] 86	E-4
Redwater 1,[illegible]41	I-6
Red Willow	K-6
Reno	F-3
Ribstone 64	J-8
Richdale	L-7
Rich Lake	H-7
Rich Valley	I-5
Ricinus	K-5
Rimbey 1,375	J-5
Rivercourse	J-8
Rivière Qui Barre	I-5
Robb 256	J-3
Rochester 111	H-6
Rochfort Bridge 63	I-4
Rochon Sands	K-6
Rockyford 287	L-6
Rocky Lane	C-4
Rocky Mountain House 3,141	K-5
Rocky Rapids 94	J-5
Rolling Hills 127	M-7
Rolly View 55	J-6
Rosalind 203	J-6
Rosebud 52	L-6
Rosedale 126	L-6
Rosemary 200	M-7
Rossington	H-5
Round Hill 97	J-6
Rowley	L-6
Royal Park	I-7
Rumsey 85	K-6
Rycroft 481	F-2
Ryley 428	J-6
St. Albert 15,088	I-6
St. Brides	I-7
St. Francis	J-5
St. Isidore	F-3
St. Lina 57	H-7
St. Michael 72	I-6
St. Paul 4,187	I-7
St. Vincent	H-7
Saddle Lake	I-7
Sandy Beach	I-5
Sandy Lake 86	F-6
Sangudo 350	I-5
Scandia	M-7
Scapa	K-7
Schuler 97	M-8
Scotfield	L-7
Seba Beach 165	I-5
Sedalia	L-8
Sedgewick 737	J-7
Seebe 108	L-4
Sentinel	N-5
Seven Persons 57	N-8
Sexsmith 622	G-2
Shaughnessy 323	N-6
Sheerness	L-7
Shepard	M-5
Sherwood Park 21,500	I-6
Shoal Creek	H-5
Shouldice	M-6
Sibbald 60	L-8
Silver Beach	J-5
Silver Valley	F-2
Skiff	N-7
Slave Lake 2,836	G-5
Smith 445	G-5
Smoky Lake 1,075	I-6
Spedden 71	H-7
Spirit River 1,160	F-2
Spondin	K-7
Spring Coulee 56	O-6
Sprucefield	H-6
Spruce Grove 4,256	I-5
Spruce View 104	K-5
Sputinow	I-8
Standard 281	L-6
Stand Off	N-6
Stanger	I-5
Stanmore	L-7
Star	I-6
Stauffer	K-5
Stavely 351	N-6
Steen River	B-3
Stettler 4,168	K-6
Stirling 436	N-6
Stony Plain 1,919	I-5
Strathmore 1,200	L-6
Streamstown	I-8
Strome 218	J-7
Sturgeon Heights	G-3
Suffield 70	M-7
Sundance Beach	J-5
Sundre 987	L-5
Sunnybrook 56	J-5
Sunnynook	L-7
Sunnyslope	L-6
Sunset House	G-3
Swalwell 51	L-6
Swan Hills 2,038	H-4
Sylvan Lake 1,597	K-5
Taber 4,765	N-7
Talbot	K-7
Tangent 96	F-3
Tar Island	E-7
Tawatinaw	H-6
Teepee Creek	G-2
Tees 64	K-6
Telfordville	J-5
Therien 51	H-7
Thorhild 543	H-6
Thorsby 604	J-5
Three Creeks	F-3
Three Hills 1,385	L-6
Throne	K-7
Tiger Lily	H-5
Tilley 277	M-7
Tofield 1,078	I-6
Tolland	J-8
Tomahawk 68	I-5
Torrington 146	L-6
Triangle	G-3
Trochu 739	K-6
Trout Lake 162	F-5
Tulliby Lake	I-8
Turin 102	N-6
Turner Valley 821	M-5
Twin Butte	O-5
Twin Lakes	D-3
Two Hills 1,113	I-7
Uncas	J-5
Valhalla Centre	G-2
Valleyview 1,708	G-3
Vauxhall 1,008	N-7
Vega	H-5
Vegreville 3,867	I-7
Venice	H-7
Vermilion 2,915	J-7
Veteran 267	K-7
Viking 1,207	J-7
Villeneuve	I-5
Vilna 303	I-7
Vimy 115	I-6
Violet Grove 94	J-4
Vulcan 1,384	M-6
Wabamun 336	I-5
Wabasca 172	F-5
Wainwright 3,872	J-7
Walsh 59	N-8
Wandering River	G-6
Wanham 256	F-2
Warburg 451	J-5
Wardlow	M-7
Warner 408	O-7
Warspite 110	I-6
Warwick	I-7
Wasel	I-7
Waskatenau 233	I-6
Waterton Park 120	O-5
Water Valley	L-5
Watino 68	F-3
Waugh	I-6
Wayne 55	L-6
Weasel Creek	H-6
Welling 64	N-6
Wembley 380	G-2
West Cove	I-5
Westerose	J-5
Westlock 3,524	I-5
Westward Ho 104	L-5
Wetaskiwin 6,666	J-6
Whitecourt 3,230	I-4
Whitefish Lake	H-7
Whitelaw 192	F-2
Widewater 126	G-4
Wild Horse	O-8
Wildwood 386	I-4
Willingdon 318	I-7
Wimborne 59	K-6
Winfield 209	J-5
Winnifred	N-7
Woking 85	G-2
Woodhouse	N-6
Woolford	O-6
Worsley 86	E-2
Wostok	I-6
Wrentham 75	N-7
Yeoford	J-5
Youngstown 305	L-7

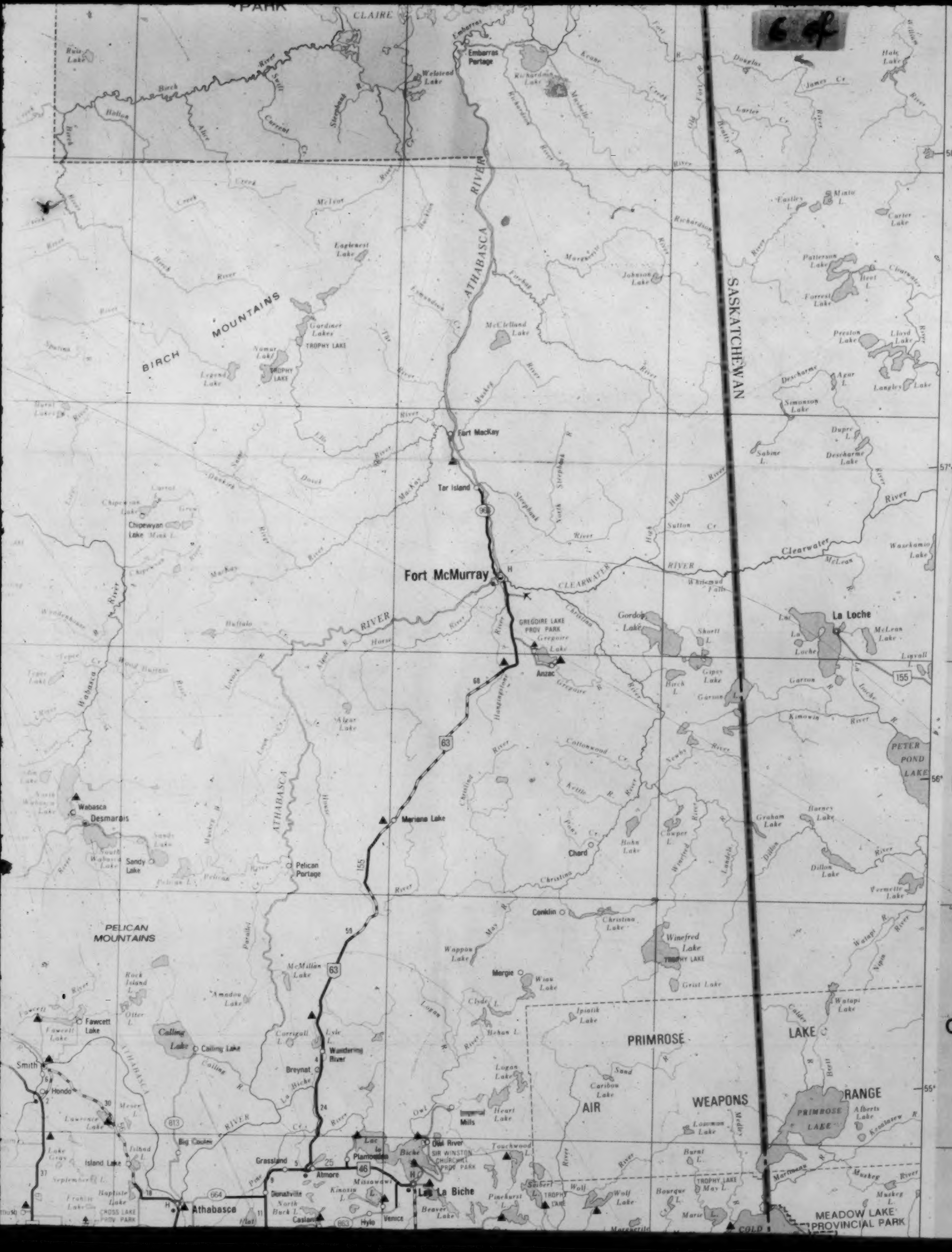

114°
To Hay River
113°
112°
111°
110°
109°
60°
59°
58°
A
B
C
D
Fort Smith
Fitzgerald
WOOD
BUFFALO
NATIONAL
PARK
SLAVE RIVER
PEACE RIVER
LAKE CLAIRE
Fort Chipewyan
Embarras Portage
ATHABASCA LAKE
Uranium City
Eldorado
Beaverlodge
Camsell Portage
Black Bay
Thomson Bay
Tazin Lake
Andrew Lake
Mercredi Lake
Tulip Lake
Charles Lake
St. Agnes Lake
Colin Lake
Cornwall Lake
Bocquene Lake
Darwin Lake
Wylie Lake
Ryan Lake
Lowell Lake
Old Fort Bay
Dowler Lake
Lillabo Lake
Carswell Lake
Tuma Lake
Bartlett Lake
Hale Lake
Archibald Lake
Pine Lake
Conibear Lake
Robertson Lake
Merryweather Lake
Jackfish Lakes
Bowhay Lake
Garden Creek
Ruis Lake
Mamawi Lake
Baril Lake
Richardson Lake
Welstead Lake
Eaglenest Lake
McClelland Lake
Johnson Lake
Patterson Lake
Forrest Lake
Beet L.
Preston Lake
Lloyd Lake
Minto L.
Eastley L.
Carter Lake
Harper Lake
Nettell Lake
Nolan L.
Thainka Lake
Tsalwor Lake
Thluicho Lake
ATHABASCA RIVER
MOUNTAINS
SASKATC
ORIES
Warden Station

4-1


C
D
E
F
G
58°
57°
56°
55°
BRITISH COLUMBIA
EDMONTON
683 Miles
HAY RIVER, N.W.T.
DAWSON CREEK, B.C.
1542 Miles
FAIRBANKS, ALASKA
EDMONTON
368 Miles
DAWSON CREEK, B.C.
To the Yukon Territory and Alaska
To Prince George
PEACE
RIVER
BUFFALO
CLEAR HILLS
SADDLE HILLS
Meander River
Paddle Prairie
Keg River
Carcajou
La Crete
Buffalo Head Prairie
FERRY
Fort Vermilion
Twin Lakes
Hotchkiss
Notikewin
Manning
North Star
Deadwood
Clear Hills
Dixonville
Chinook Valley
Worsley
Eureka River
Hines Creek
LAC CARDINAL PROV. PARK
Grimshaw
Berwyn
Peace River
Three Creeks
St. Isidore
Nampa
Marie-Reine
Reno
Lac Magloire
Jean Côté
Tangent
Codesa
Eaglesham
Girouxville
Watino
Falher
Donnelly
McLennan
Kathleen
WINAGAMI LAKE PROV. PARK
Guy
High Prairie
Triangle
Enilda
Grouard
Joussard
Driftpile
LESSER SLAVE LAKE
Kimiwan Lake
Bison Lake
Haig Lake
Otter Lakes
Cadotte Lake
Little Buffalo Lake
Lubicon Lake
Gift Lake
Buffalo Bay
Fort St. John
Charlie L.
Taylor
Clayhurst
Cherry Point
Bear Canyon
Cleardale
Silver Valley
Blueberry Mountain
MOONSHINE LAKE PROV. PARK
Bonanza
Gordondale
Bay Tree
Whitelaw
Bluesky
Brownvale
Fairview
Dunvegan
Spirit River
Rycroft
Wanham
Woking
Pooria
Dee River
Farmington
Rolla
Dawson Creek
Pouce Coupé
Tupper
Swan Lake
Demmitt
Valhalla Centre
La Glace
Hythe
Lymburn
Buffalo Lake
Sexsmith
Goodfare
SASKATOON ISLAND PROV. PARK
Beaverlodge
Hughes
Wembley
Clairmont
Grande Prairie
EL 2150
O'BRIEN PROV. PARK
Grovedale
Elmworth
Teepee Creek
Bezanson
Debolt
Crooked Creek
Sturgeon Heights
Sturgeon Lake
Calais
WILLIAMSON PROV. PARK
Valleyview
New Fish Creek
Sunset House
Snipe Lake
Little Smoky
Grassy Lake
Meekwap Lake
Puskwaskau Lake
Wapiti Lake
Wallace Mtn. 4130
SWAN HILLS
ROAD
Hay River
Chinchaga
Notikewin River
Whitemud River
Smoky River
Wapiti River
Kiskatinaw
Pouce Coupe River
Heart River
Little Smoky River
Pine River
Cadotte River
Wabasca
35
58
88
122
49
2
2A
97
29
43
34
40
59
64
682
683
686
688
689
691
692
722
725
726
730
731
733
740
741
743
744
747
749
750
664
669
676
679
684

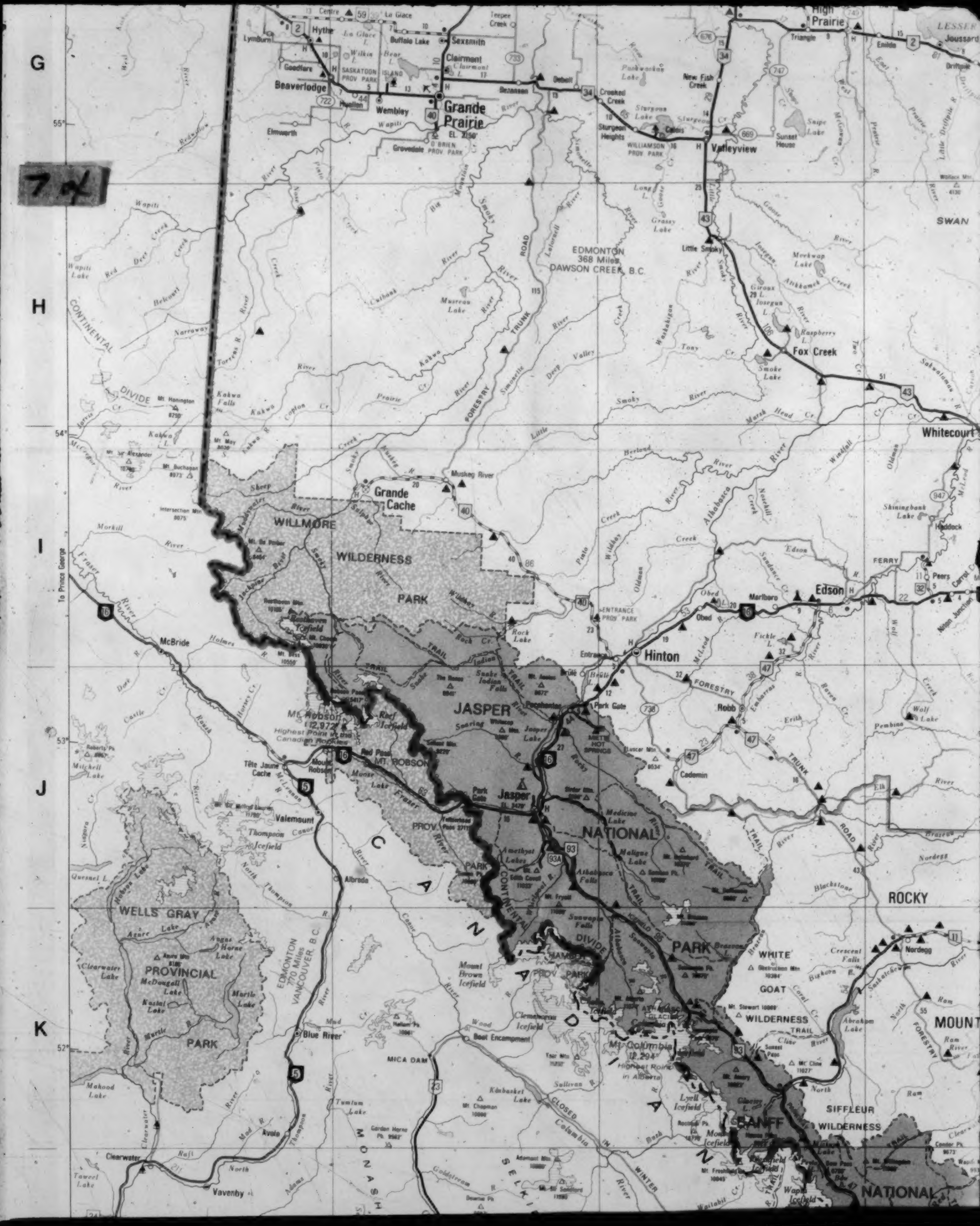

5 of
High Level
Rocky Lane
FERRY
Fort Vermilion
Fox Lake
Vermilion Falls
PEACE RIVER
EDMONTON
583 Miles
RIVER, N.W.T.
PARK
CLAIRE
Birch
Bolton
Swift
Sleepwood
La Crete
Buffalo Head Prairie
Paddle Prairie
FERRY
Carcajou
BUFFALO HEAD HILLS
Wadlin Lake
WABASCA RIVER
Harper Creek
Lambert Creek
Mikkwa
Birch River
BIRCH MOUNTAINS
Eaglenest Lake
Gardiner Lakes
TROPHY LAKE
Namur Lake
Legend Lake
Twin Lakes
Talbot Lake
Burnt Lakes
Russell Lake
Bison Lake
Sawn Lake
Hay Lake
Otter Lakes
Chipewyan Lake
Carrol L.
Grew L.
Mink L.
TROPHY LAKE
Round Lake
Godin Lake
Peerless Lake
Quitting Lake
Graham Lake
Trout Lake
North Star
Deadwood
Dixonville
Cadotte Lake
Little Buffalo Lake
Loon Lake
Red Earth Creek
Loon Lake
Lubicon Lake
Wabasca
Tepee Lake
Wood Buffalo
MacKay
Buffalo
RIVER
Algar Lake
Fort Mc
Peace River
Three Creeks
St. Isidore
Marie-Reine
Nampa
Reno
Jean Côté
Muskwa Lake
Muskwa
Godin Lake
North Wabasca Lake
Wabasca
Desmarais
Sandy Lake
South Wabasca Lake
Pelican L.
Pelican Portage
ATHABASCA
Mariana Lake
Atikameg
Gift Lake
Utikuma Lake
Nipisi Lake
Pastecho
Mistehae Lake
Girouxville
Falher
Donnelly
McLennan
Kathleen
WINAGAMI LAKE PROV. PARK
Guy
High Prairie
Grouard
Buffalo Bay
PELICAN MOUNTAINS
Marten Mtn.
LESSER SLAVE LAKE PROV. PARK
LESSER SLAVE LAKE
Joussard
Kinuso
Canyon Creek
Widewater
Enilda
Triangle
Driftpile
Faust
Slave Lake
Fawcett
Fawcett Lake
Rock Island L.
Otter L.
Calling Lake
McMillan Lake
Amadou Lake
Corrigall L.
Lyle L.
Wandering River
Breynat
New Fish Creek
Calais
Valleyview
Sunset House
Snipe Lake
House Mtn.
Wallace Mtn. 4130
Deer Mtn. 3980
SWAN HILLS
Swan Hills
Smith
Hondo
Lawrence Lake
Chisholm Mills
Island Lake
Lake Gray
September L.
Francis Lake
Baptiste Lake
CROSS LAKE
Athabasca
Big Coulee
Grassland
Atmore
Donatville
North Buck L.
Lac la Biche
Missawawi L.
Kinosis L.
Lac La Biche
Plamondon
Little Smoky
35
58
58A
43
17
24
27
692
741
691
743
686
2A
684
683
744
2
750
679
748
676
34
747
669
967
813
664
155
63
46
55
30

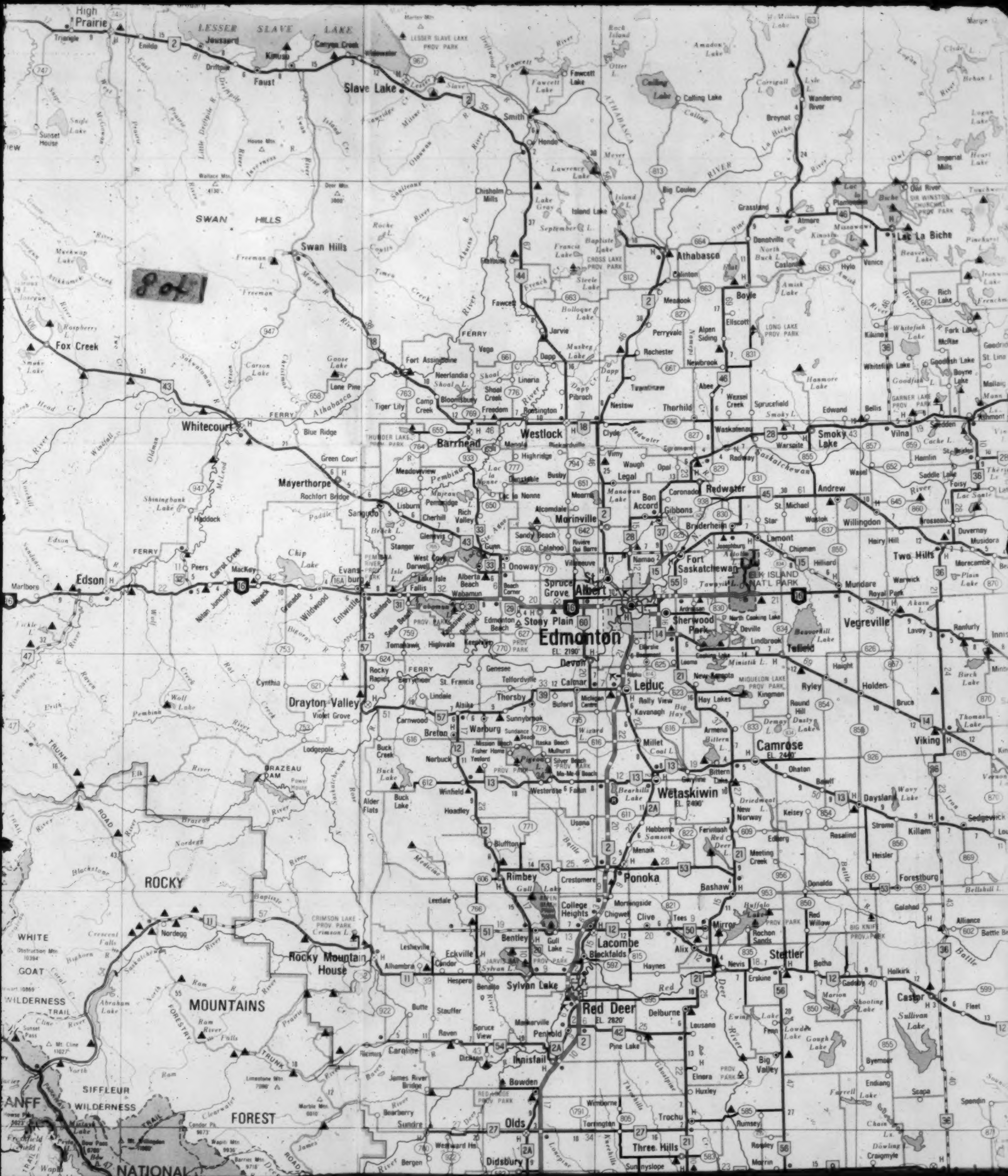
6 of



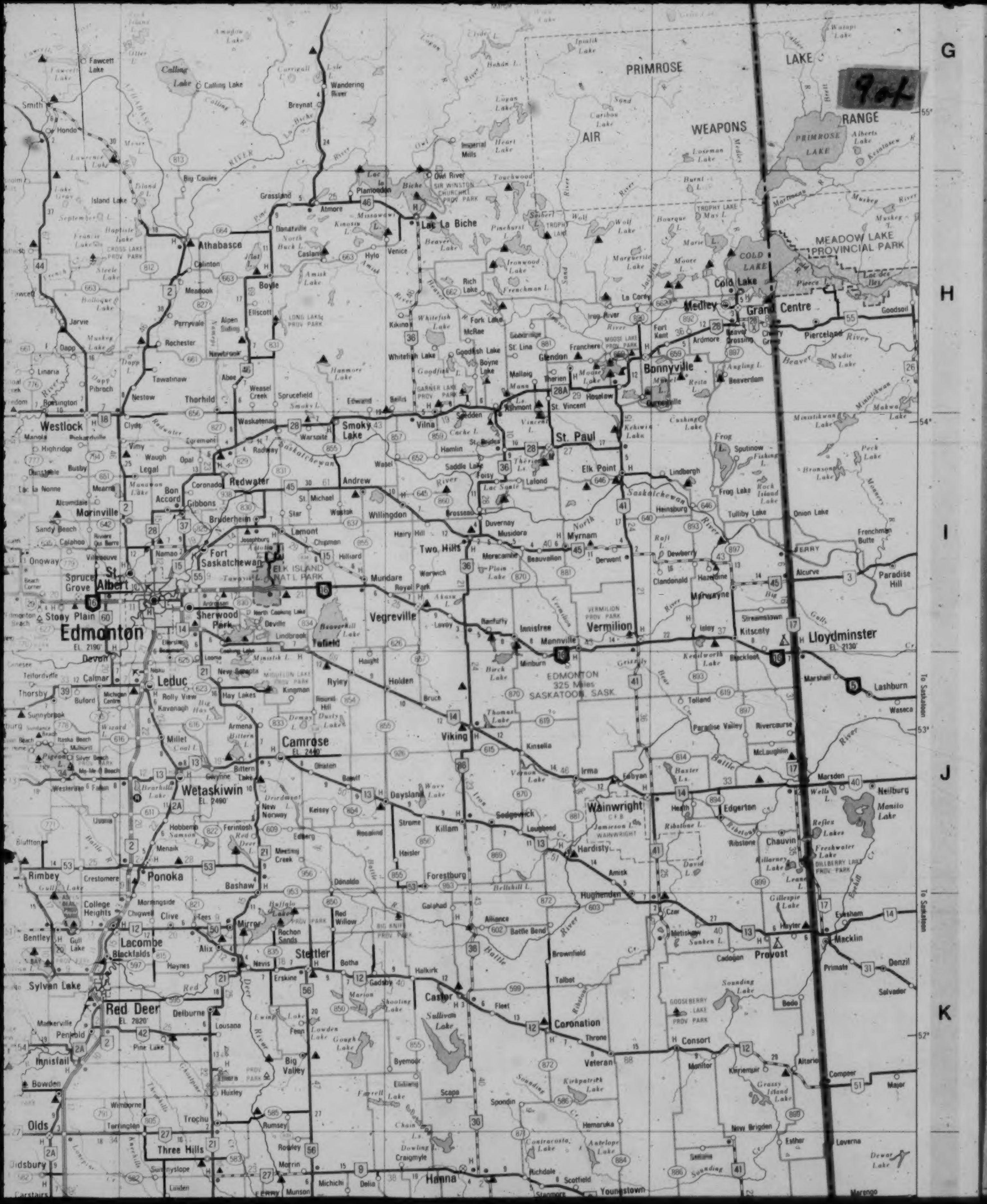
PARK
CLAIRE
Embarras Portage
Welstead Lake
Richardson Lake
Birch River
Swift Current Cr.
Steephank R.
Ruis Lake
58°
ATHABASCA RIVER
Eaglenest Lake
BIRCH MOUNTAINS
Gardiner Lakes
TROPHY LAKE
Namur Lake
Legend Lake
McClelland Lake
Johnson Lake
Richardson River
SASKATCHEWAN
Eastley L.
Minto L.
Carter Lake
Patterson Lake
Forrest Lake
Clearwater
Preston Lake
Lloyd Lake
Descharme
Agar L.
Langley Lake
Simonson Lake
Fort MacKay
Tar Island
963
Dupre L.
Sabine L.
Descharme Lake
57°
Chipewyan Lake
Fort McMurray
H
CLEARWATER RIVER
Clearwater
Whitemud Falls
High Hill River
Sutton Cr
Wasekamio Lake
McLean
GREGOIRE LAKE PROV PARK
Gregoire Lake
Anzac
Gordon Lake
Shortt L.
Gipsy Lake
Birch L.
Garson
La Loche
McLean Lake
Lac La Loche
155
Christina River
Horse River
Algar Lake
63
Cottonwood Cr.
Kettle R.
Kimowin River
Newby River
PETER POND LAKE
56°
Wabasca
Desmarais
Sandy Lake
Pelican Portage
Mariana Lake
Chard
Cowper L.
Graham Lake
Dillon Lake
Vermette Lake
Barney Lake
PELICAN MOUNTAINS
Conklin
Christina Lake
Winefred Lake
TROPHY LAKE
Grist Lake
Wappau Lake
Margie
Wiau Lake
McMillan Lake
Fawcett Lake
Calling Lake
Corrigall L.
Lyle L.
Wandering River
Breynat
Hondo
Smith
Ipiatik Lake
PRIMROSE
LAKE
AIR
WEAPONS
RANGE
55°
Caribou Lake
Logan Lake
Heart Lake
Imperial Mills
PRIMROSE LAKE
Alberts Lake
Big Coulee
Island Lake
Grassland
Atmore
Lac la Plamondon
Lac La Biche
Owl River
SIR WINSTON CHURCHILL PROV PARK
46
25
Donatville
Athabasca
Kinosis L.
Missawawi L.
Beaver Lake
Caslan
Hylo
Venice
Pinehurst L.
Seibert L.
Wolf Lake
Touchwood L.
Burnt L.
Bourque L.
May L.
TROPHY LAKE
CROSS LAKE PROV PARK
MEADOW LAKE PROVINCIAL PARK
COLD
C
D
E
F
G

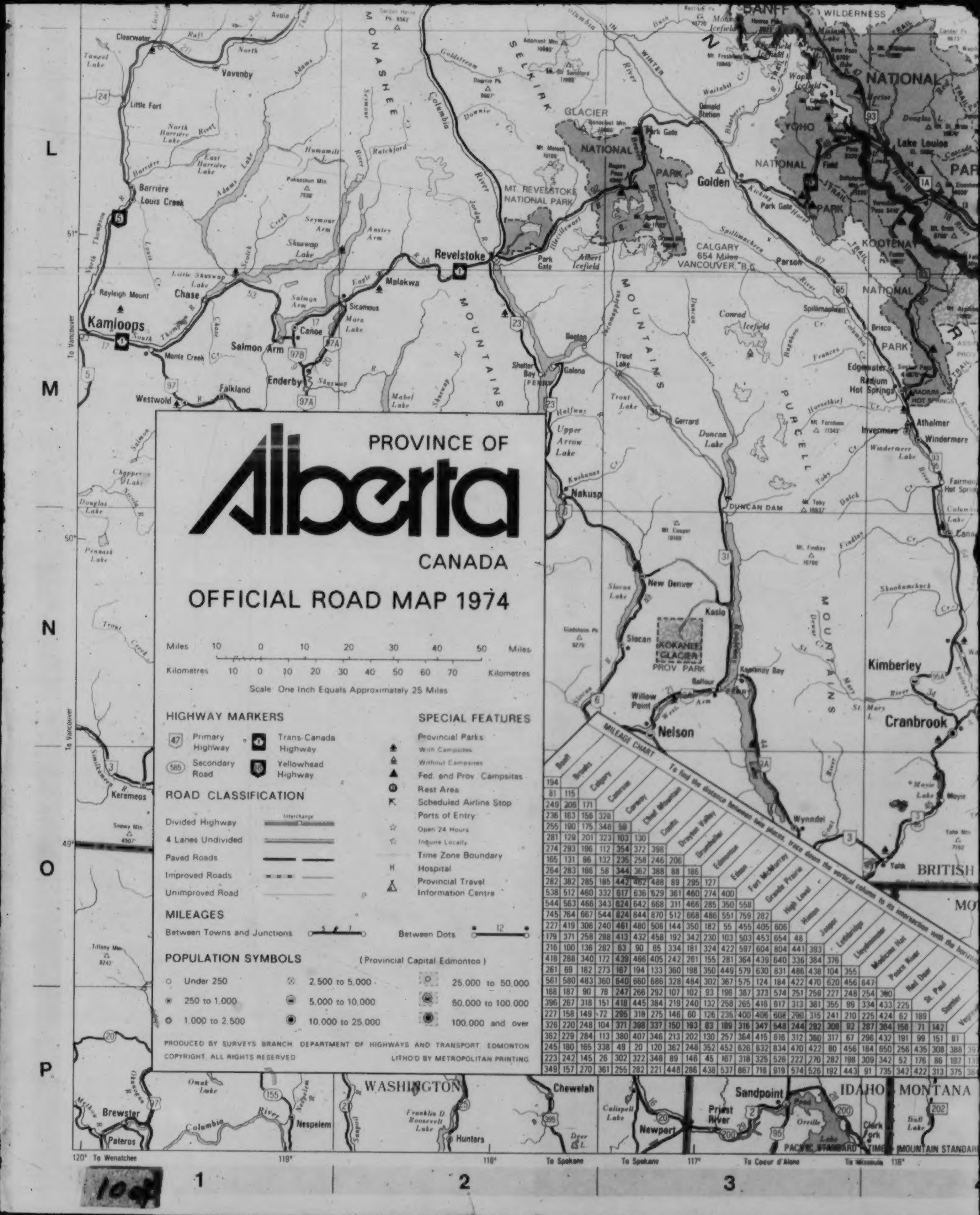
7 of


G
H
I
J
K
55°
54°
53°
52°
High Prairie
Grande Prairie
EL. 2190'
Beaverlodge
Hythe
Lymburn
Goodfare
Wembley
Elmworth
Sexsmith
Clairmont
Buffalo Lake
Teepee Creek
Debolt
Crooked Creek
Sturgeon Heights
Valleyview
Sunset House
New Fish Creek
Triangle
Enilda
Joussard
LESSER
SASKATOON PROV. PARK
O'BRIEN PROV. PARK
WILLIAMSON PROV. PARK
Grovedale
Little Smoky
Fox Creek
Whitecourt
SWAN
EDMONTON 368 Miles
DAWSON CREEK, B.C.
FORESTRY TRUNK ROAD
Smoky River
Wapiti River
Kakwa Falls
Mt. Hanington 8250'
CONTINENTAL DIVIDE
Grande Cache
Muskeg River
WILLMORE WILDERNESS PARK
Sulphur
Intersection Mtn 8075'
Mt. Sir Alexander 10740'
Mt. Buchanan
Fraser River
To Prince George
McBride
Tête Jaune Cache
Mount Robson
Mt. Robson 12,972'
Highest Point in the Canadian Rockies
Robson Pass
Reef Icefield
Red Pass
MT. ROBSON PROV. PARK
Yellowhead Pass 3711'
Valemount
Thompson Icefield
Albreda
Blue River
Avola
Clearwater
Vavenby
MICA DAM
Boat Encampment
Kinbasket Lake
WELLS GRAY PROVINCIAL PARK
Clearwater Lake
Azure Lake
Hobson Lake
Murtle Lake
Mahood Lake
EDMONTON 770 Miles
VANCOUVER, B.C.
MONASHEE
SELKIRK
CANADIAN
Hinton
Entrance
ENTRANCE PROV. PARK
Obed
Marlboro
Edson
Peers
Robb
Cadomin
Brûlé
Pocahontas
Park Gate
MIETTE HOT SPRINGS
JASPER NATIONAL PARK
Jasper
Jasper Lake
Medicine Lake
Maligne Lake
Amethyst Lakes
Athabasca Falls
Sunwapta Falls
ICEFIELD PARKWAY
HAMBER PROV. PARK
Mount Brown Icefield
Clemenceau Icefield
Columbia Icefield
Mt. Columbia 12,294'
Highest Point in Alberta
Lyell Icefield
Mons Icefield
Wapta Icefield
BANFF NATIONAL
WHITE GOAT WILDERNESS
SIFFLEUR WILDERNESS
ROCKY MOUNT
Nordegg
Crescent Falls
Abraham Lake
Ram River
CLOSED IN WINTER
Columbia River
Sullivan R.
16
40
43
47
93
93A
5
23
734
733
722
669
747
34
2
11


High Prairie
LESSER SLAVE LAKE
LESSER SLAVE LAKE PROV. PARK
Slave Lake
Faust
Kinuso
Smith
SWAN HILLS
Swan Hills
Athabasca
Calling Lake
Wandering River
Lac La Biche
Fox Creek
Whitecourt
Mayerthorpe
Barrhead
Westlock
Smoky Lake
Vilna
Edson
Evansburg
Entwistle
Stony Plain
Spruce Grove
St. Albert
Edmonton
EL. 2190'
Fort Saskatchewan
Sherwood Park
ELK ISLAND NAT'L PARK
Vegreville
Two Hills
Leduc
Devon
Calmar
Drayton Valley
Camrose
EL. 2440'
Viking
Wetaskiwin
EL. 2490'
Ponoka
Rimbey
Lacombe
Stettler
Castor
Rocky Mountain House
Sylvan Lake
Red Deer
EL. 2820'
Innisfail
Olds
Didsbury
Three Hills
Trochu
ROCKY
MOUNTAINS
WHITE GOAT WILDERNESS
SIFFLEUR WILDERNESS
FOREST
TRUNK ROAD
FORESTRY TRUNK ROAD
BANFF NATIONAL
CRIMSON LAKE PROV. PARK
BRAZEAU DAM
Nordegg
Daysland
Killam
Sedgewick
Forestburg
Alliance

8 of 1


G
H
I
J
K
9of
55°
54°
53°
52°
PRIMROSE LAKE AIR WEAPONS RANGE
MEADOW LAKE PROVINCIAL PARK
COLD LAKE
Calling Lake
Fawcett Lake
Smith
Hondo
Wandering River
Breynat
Grassland
Atmore
Plamondon
Lac La Biche
Owl River
SIR WINSTON CHURCHILL PROV. PARK
Athabasca
Boyle
Colinton
Meanook
Perryvale
Rochester
Jarvie
Dapp
Pibroch
Westlock
Clyde
Vimy
Legal
Thorhild
Waskatenau
Smoky Lake
Vilna
St. Paul
Elk Point
Bonnyville
Cold Lake
Medley
Grand Centre
Glendon
Ardmore
Pierceland
Goodsoil
Redwater
Bon Accord
Gibbons
Morinville
Andrew
Willingdon
Two Hills
Myrnam
Lindbergh
Frog Lake
Fort Saskatchewan
ELK ISLAND NAT'L PARK
Lamont
Mundare
Vegreville
St. Albert
Spruce Grove
Stony Plain
Edmonton
EL. 2190'
Sherwood Park
Devon
Leduc
Calmar
Thorsby
Tofield
Ryley
Holden
Vermilion
Mannville
Innisfree
Minburn
Kitscoty
Lloydminster
EL. 2130'
Marshall
Lashburn
To Saskatoon
EDMONTON 325 Miles SASKATOON, SASK.
Camrose
EL. 2440'
Viking
Irma
Wainwright
Edgerton
Chauvin
Marsden
Neilburg
Wetaskiwin
EL. 2490'
Millet
Daysland
Killam
Sedgewick
Hardisty
Ponoka
Rimbey
Bashaw
Forestburg
Alliance
Hughenden
Provost
Macklin
Lacombe
Blackfalds
Stettler
Castor
Coronation
Consort
Veteran
Sylvan Lake
Red Deer
EL. 2820'
Penhold
Innisfail
Bowden
Olds
Didsbury
Carstairs
Trochu
Three Hills
Big Valley
Hanna
Youngstown
Delia
Munson
Morrin
Michichi


L
M
N
O
P
1
2
3
Clearwater
Vavenby
Little Fort
Barriere
Louis Creek
Kamloops
Chase
Rayleigh Mount
Monte Creek
Salmon Arm
Canoe
Sicamous
Enderby
Falkland
Westwold
Malakwa
Revelstoke
Shuswap Lake
Adams Lake
MONASHEE
MOUNTAINS
SELKIRK
MOUNTAINS
GLACIER NATIONAL PARK
MT. REVELSTOKE NATIONAL PARK
Golden
YOHO NATIONAL PARK
BANFF
NATIONAL
Lake Louise
KOOTENAY NATIONAL PARK
CALGARY 654 Miles VANCOUVER, B.C.
Parson
Brisco
Edgewater
Radium Hot Springs
Invermere
Athalmer
Windermere
PURCELL MOUNTAINS
Galena
Shelter Bay
Nakusp
Upper Arrow Lake
Trout Lake
Gerrard
Duncan Lake
DUNCAN DAM
New Denver
Slocan
Kaslo
KOKANEE GLACIER PROV. PARK
Kootenay Bay
Balfour
Willow Point
Nelson
Kimberley
Cranbrook
Wynndel
Yahk
Moyie
BRITISH
Keremeos
WASHINGTON
Chewelah
Newport
Priest River
Sandpoint
IDAHO
MONTANA
Brewster
Pateros
Nespelem
Hunters
PACIFIC STANDARD TIME
MOUNTAIN STANDARD
120° To Wenatchee
119°
118°
To Spokane
To Spokane
117°
To Coeur d'Alene
To Missoula 116°
To Vancouver
To Vancouver
10a

PROVINCE OF

Alberta

CANADA

OFFICIAL ROAD MAP 1974

Miles 10 0 10 20 30 40 50 Miles

Kilometres 10 0 10 20 30 40 50 60 70 Kilometres

Scale: One Inch Equals Approximately 25 Miles

HIGHWAY MARKERS

47 Primary Highway

585 Secondary Road

1 Trans-Canada Highway

16 Yellowhead Highway

ROAD CLASSIFICATION

Divided Highway — Interchange

4 Lanes Undivided

Paved Roads

Improved Roads

Unimproved Road

SPECIAL FEATURES

Provincial Parks:

With Campsites

Without Campsites

Fed. and Prov. Campsites

Rest Area

Scheduled Airline Stop

Ports of Entry:

☆ Open 24 Hours

☆ Inquire Locally

Time Zone Boundary

H Hospital

Provincial Travel Information Centre

MILEAGES

Between Towns and Junctions 5 7

Between Dots 12

POPULATION SYMBOLS

(Provincial Capital Edmonton)

○ Under 250

● 250 to 1,000

● 1,000 to 2,500

2,500 to 5,000

5,000 to 10,000

10,000 to 25,000

25,000 to 50,000

50,000 to 100,000

100,000 and over

PRODUCED BY SURVEYS BRANCH, DEPARTMENT OF HIGHWAYS AND TRANSPORT, EDMONTON

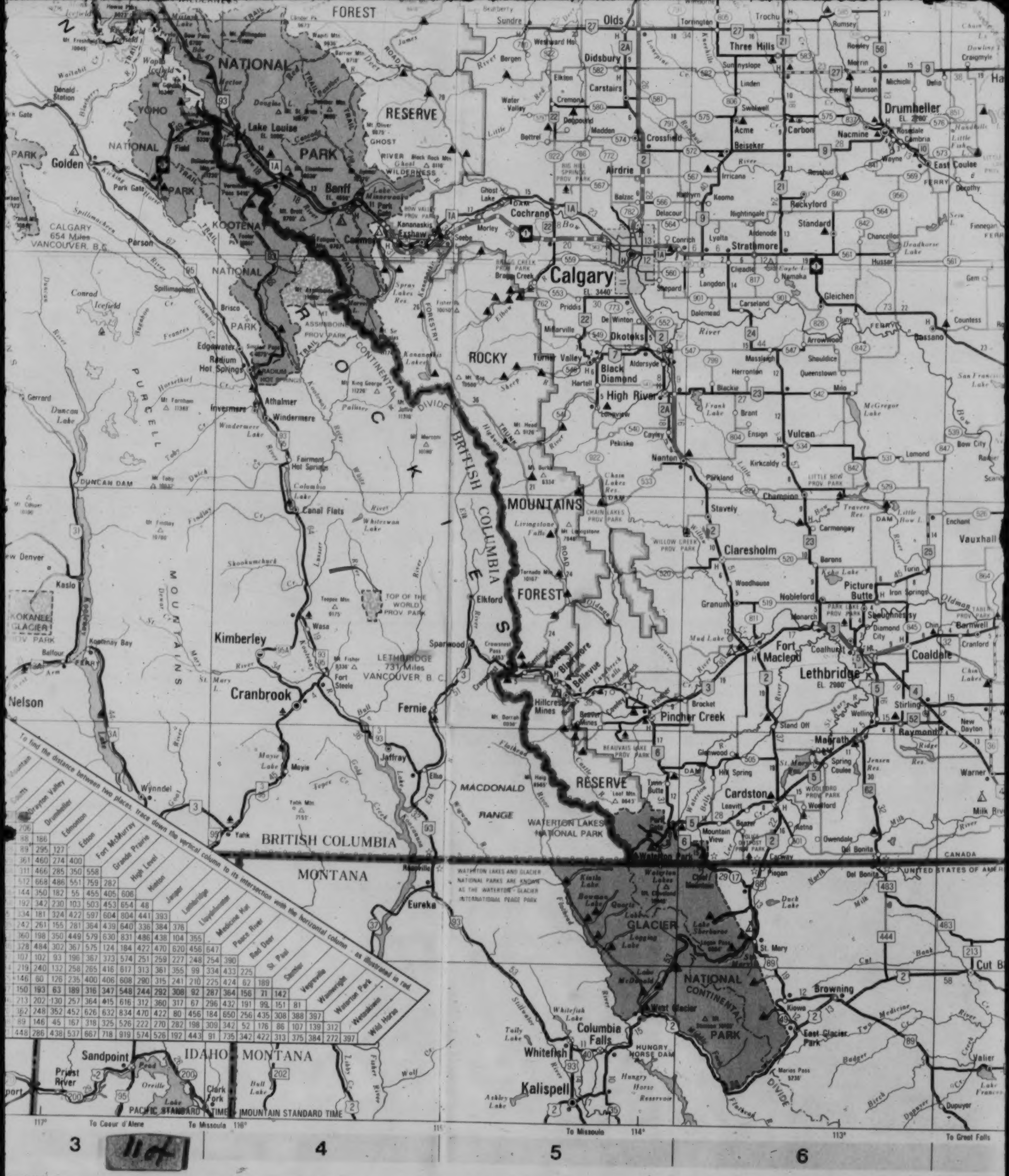
COPYRIGHT. ALL RIGHTS RESERVED

LITHO'D BY METROPOLITAN PRINTING

MILEAGE CHART

To find the distance between two places, trace down the vertical column to its intersection with the horizo

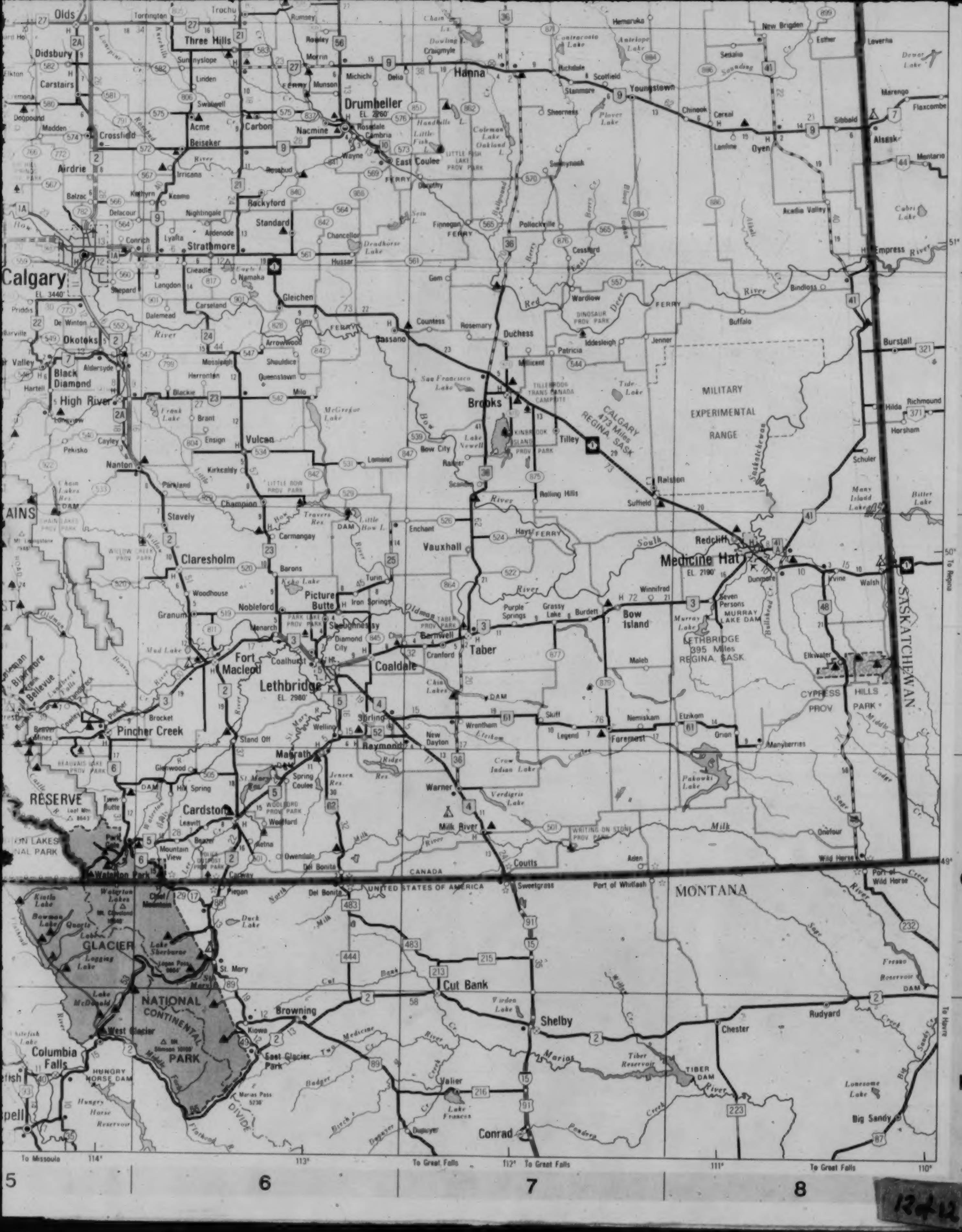
Banff	Brooks	Calgary	Camrose	Canmore	Chief Mountain	Coutts	Drayton Valley	Drumheller	Edmonton	Edson	Fort McMurray	Grande Prairie	High Level	Hinton	Jasper	Lethbridge	Lloydminster	Medicine Hat	Peace River	Red Deer	St. Paul	Stettler		
194																								
81	115																							
249	206	171																						
236	163	156	328																					
255	190	175	348	58																				
281	129	201	323	103	130																			
274	293	196	112	354	372	398																		
165	131	86	132	235	258	246	206																	
264	283	186	58	344	362	388	88	186																
282	382	285	185	442	462	488	89	295	127															
538	512	460	332	617	636	629	361	460	274	400														
544	563	466	343	624	642	668	311	466	285	350	558													
745	764	667	544	824	844	870	512	668	486	551	759	282												
227	419	306	240	461	480	506	144	350	182	55	455	405	606											
179	371	258	288	413	432	458	192	342	230	103	503	453	654	48										
216	100	136	282	63	90	65	334	181	324	422	597	604	804	441	393									
418	288	340	172	439	466	405	242	261	155	281	364	439	640	336	384	376								
261	69	182	273	167	194	133	360	198	350	449	579	630	831	486	438	104	355							
561	580	483	360	640	660	686	328	484	302	367	575	124	184	422	470	620	456	647						
168	187	90	78	247	266	292	107	102	93	196	387	373	574	251	259	227	248	254	380					
396	267	318	151	418	445	384	219	240	132	258	265	416	617	313	361	355	99	334	433	225				
227	158	149	72	295	318	275	146	60	126	235	400	406	608	290	315	241	210	225	424	62	189			
326	220	248	104	371	398	337	150	193	63	189	316	347	548	244	292	308	92	287	364	156	71	142		
362	229	284	113	380	407	346	213	202	130	257	364	415	616	312	360	317	67	296	432	191	99	151	81	
245	180	165	338	49	20	120	362	248	352	452	626	632	834	470	422	80	456	184	650	256	435	308	388	[illegible]
223	242	145	26	302	322	348	89	146	45	167	318	325	526	222	270	282	198	309	342	52	176	86	107	[illegible]
349	157	270	361	255	282	221	448	286	438	537	667	718	919	574	526	192	443	91	735	342	422	313	375	[illegible]


NATIONAL
PARK
Banff
Lake Louise
YOHO
NATIONAL
PARK
Golden
KOOTENAY
NATIONAL
PARK
CALGARY
654 Miles
VANCOUVER, B.C.
FOREST
RESERVE
ROCKY
MOUNTAINS
FOREST
RESERVE
CONTINENTAL
DIVIDE
BRITISH
COLUMBIA
PURCELL
MOUNTAINS
Calgary
EL. 3440'
Olds
Didsbury
Carstairs
Crossfield
Airdrie
Cochrane
Canmore
Three Hills
Drumheller
EL. 2260'
Strathmore
Okotoks
High River
Black Diamond
Turner Valley
Nanton
Vulcan
Claresholm
Stavely
Fort Macleod
Lethbridge
EL. 2900'
Coaldale
Picture Butte
Pincher Creek
Cardston
Magrath
Raymond
Bassano
Vauxhall
Invermere
Radium Hot Springs
Kimberley
Cranbrook
Fernie
Sparwood
Elkford
Nelson
Kaslo
LETHBRIDGE
731 Miles
VANCOUVER, B.C.
BRITISH COLUMBIA
MONTANA
IDAHO
MONTANA
CANADA
UNITED STATES OF AMERICA
WATERTON LAKES NATIONAL PARK
WATERTON LAKES AND GLACIER NATIONAL PARKS ARE KNOWN AS THE WATERTON - GLACIER INTERNATIONAL PEACE PARK
GLACIER
NATIONAL
PARK
MACDONALD
RANGE
Eureka
Whitefish
Columbia Falls
Kalispell
Browning
Sandpoint
PACIFIC STANDARD TIME
MOUNTAIN STANDARD TIME
117°
To Coeur d'Alene
To Missoula
116°
115°
To Missoula
114°
113°
To Great Falls
3
4
5
6

11 of

To find the distance between two places, trace down the vertical column to its intersection with the horizontal column - as illustrated in red

	Drayton Valley	Drumheller	Edmonton	Edson	Fort McMurray	Grande Prairie	High Level	Hinton	Jasper	Lethbridge	Lloydminster	Medicine Hat	Peace River	Red Deer	St. Paul	Stettler	Vegreville	Wainwright	Waterton Park	Wetaskiwin
Drumheller	206																			
Edmonton	88	186																		
Edson	89	295	127																	
Fort McMurray	361	460	274	400																
Grande Prairie	311	466	285	350	558															
High Level	512	668	486	551	759	282														
Hinton	144	350	182	55	455	405	606													
Jasper	192	342	230	103	503	453	654	48												
Lethbridge	334	181	324	422	597	604	804	441	393											
Lloydminster	242	261	155	281	364	439	640	336	384	376										
Medicine Hat	360	198	350	449	579	630	831	486	438	104	355									
Peace River	328	484	302	367	575	124	184	422	470	620	456	647								
Red Deer	107	102	93	196	367	373	574	251	259	227	248	254	390							
St. Paul	219	240	132	258	265	416	617	313	361	355	99	334	433	225						
Stettler	146	60	126	235	400	406	608	290	315	241	210	225	424	62	189					
Vegreville	150	193	63	189	316	347	548	244	292	308	92	287	364	156	71	142				
Wainwright	213	202	130	257	364	415	616	312	360	317	67	296	432	191	99	151	81			
Waterton Park	362	248	352	452	626	632	834	470	422	80	456	184	650	256	435	308	388	397		
Wetaskiwin	89	146	45	167	318	325	526	222	270	282	198	309	342	52	176	86	107	139	312	
Wild Horse	448	286	438	537	667	718	919	574	526	192	443	91	735	342	422	313	375	384	272	397


Olds
Three Hills
Trochu
Didsbury
Carstairs
Hanna
Drumheller
EL. 2260'
Youngstown
Oyen
Alsask
Crossfield
Acme
Carbon
Beiseker
Airdrie
Rockyford
Standard
Strathmore
Calgary
EL. 3440'
Empress
Gleichen
Okotoks
Black Diamond
High River
Bassano
Duchess
Brooks
Burstall
Vulcan
Nanton
MILITARY
EXPERIMENTAL
RANGE
CALGARY
473 Miles
REGINA SASK
Tilley
Stavely
Claresholm
Vauxhall
Medicine Hat
EL. 2190'
Redcliff
Picture Butte
Bow Island
Fort Macleod
Lethbridge
EL. 2980'
Coaldale
Taber
LETHBRIDGE
395 Miles
REGINA, SASK
CYPRESS HILLS PROV PARK
Pincher Creek
Magrath
Raymond
Foremost
SASKATCHEWAN
RESERVE
Cardston
Warner
Milk River
Coutts
Waterton Park
CANADA
UNITED STATES OF AMERICA
MONTANA
Sweetgrass
GLACIER
NATIONAL
PARK
CONTINENTAL
DIVIDE
Cut Bank
Browning
Shelby
Chester
Rudyard
Columbia Falls
West Glacier
East Glacier Park
Valier
Conrad
Big Sandy
Tiber Reservoir
To Missoula
To Great Falls
To Great Falls
To Great Falls
To Havre
To Regina
114°
113°
112°
111°
110°
49°
50°
51°
5
6
7
8
L
M
N
O
P

12 of 12